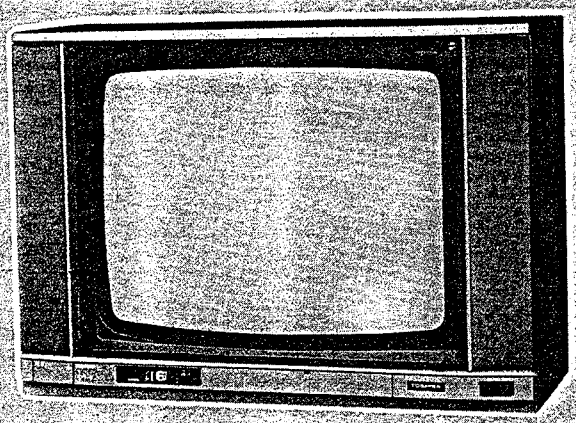
SERVICE DATA (SUPPLEMENT)
FILE NO. 020-726

TOSHIBA

TELETEXT COLOUR TELEVISION

261T4B



SPECIFICATIONS

INPUT POWER RATING	128 watts (nominal), 240 volts AC, 50Hz
AERIAL INPUT IMPEDANCES	75 ohm unbalanced type for UHF
RECEIVING CHANNELS	UHF channels ..... channels 21 to 68
INTERMEDIATE FREQUENCIES	Picture I-F carrier frequency ..... 39.5MHz Sound I-F carrier frequency ..... 33.5MHz Color sub-carrier frequency 35.07MHz
CHASSIS CONSTRUCTION	IC-Solid State, Horizontal Chassis
PICTURE TUBE	26 in. A67-701X, 626 mm (measured on diagonal of viewable picture area) 110° Deflection
SOUND OUTPUT	10 watt (at 10% harmonic distortion) x 2
SPEAKER	Woofer: 65 x 100 mm oval 4 pcs Tweeter: 50 mm round 2 pcs
AUX. TERMINAL	Headphone Jack, AV IN/OUT sockets
CABINET	Table type
DIMENSION	Height ..... 574 mm Width ..... 800 mm Depth ..... 488 mm
WEIGHT (NET)	42 kg

Jun. 1984 Printed in Japan (SO)

SAFETY INSTRUCTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION," "SAFETY PRECAUTION" AND THE "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.

X-RAY RADIATION PRECAUTION

1. The E.H.T. must be checked every time the receiver is serviced to ensure that the C.R.T. does not emit X-ray radiation as result of excessive E.H.T. voltage. The nominal E.H.T. for these receivers is 28.5 kV at zero beam current (minimum brightness) operating at 240V a.c. The maximum E.H.T. voltage permissible in any operating circumstances must not exceed 28.5 kV. When checking the E.H.T., use the 'High Voltage Check' procedure on page 3 in this manual using an accurate E.H.T. voltmeter.
2. The only source of X-RAY radiation in this receiver is the C.R.T. To prevent X-ray radiation, the replacement C.R.T. must be identical to the original fitted as specified in the Parts List.
3. Some components used in this receiver have safety related characteristics preventing the C.R.T. from emitting X-ray radiation.
   For continued safety, replacement component should only be made after referring the Product Safety Notice below.

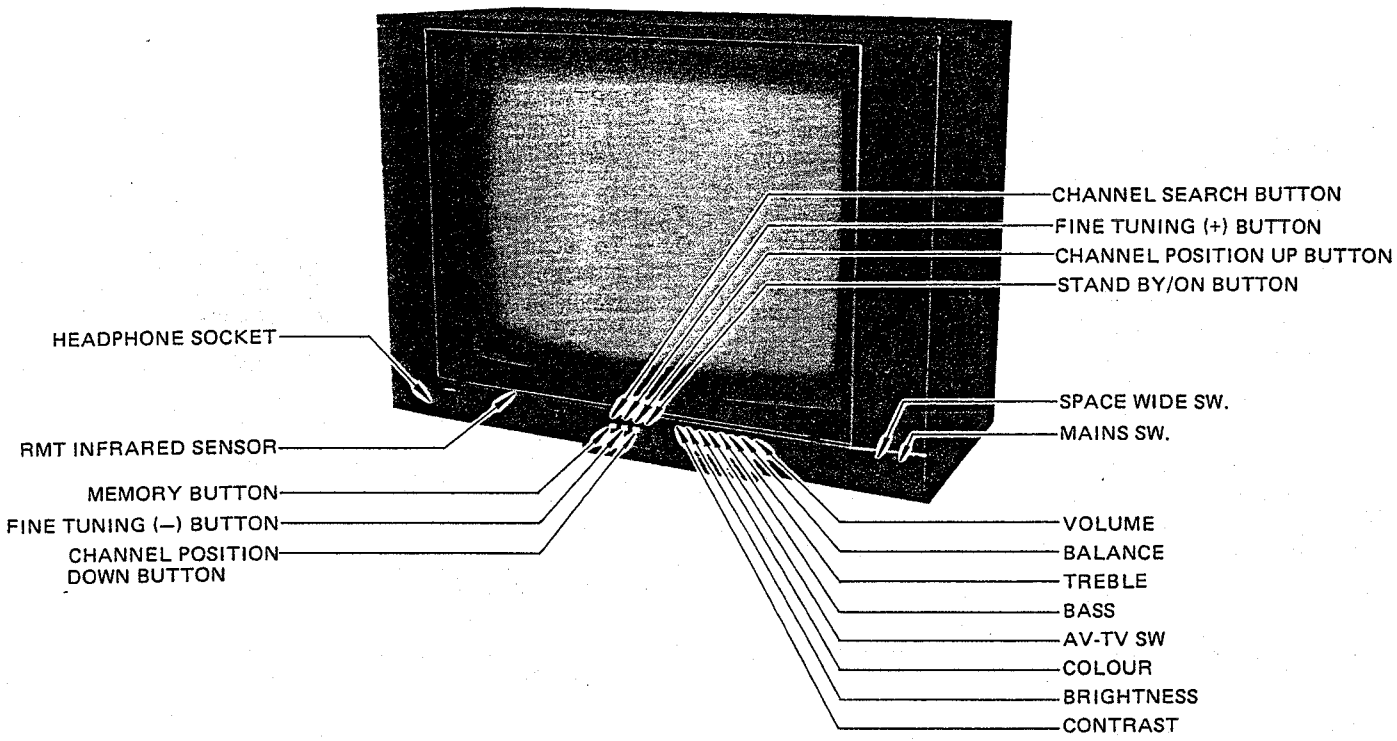
SAFETY PRECAUTION

1. This receiver has a nominal working E.H.T. voltage of 25 kV. Extreme caution should be exercised when working on the receiver with the back removed.
   Do not attempt to service this receiver if you are not conversant with the precautions and procedures for working on high voltage equipment.
   When handling or working on the C.R.T., always discharge the anode to the receiver chassis before removing the anode cap.
   The C.R.T., if broken, will violently expel glass fragments and handling faulty or new C.R.T.'s should be carried out with extreme care.
   Do not hold the C.R.T. by the neck as this is a very dangerous practice.
2. A small part of the chassis used in this receiver is, when operating, at approximately half mains potential at all times. It is therefore essential in the interest of safety that when serving or connecting any test equipment the receiver should be supplied via a suitable isolating transformer of adequate rating.
3. Replace blown fuses within the receiver with the fuse specified in the parts list.
4. When replacing wires or components to terminals or tags, wind the leads around the terminal before soldering. When replacing safety components identified by shading on the circuit diagram and parts list, it must be a Toshiba approved type and must be mounted as the original.
5. Keep wires away from high voltage or high temperature components.

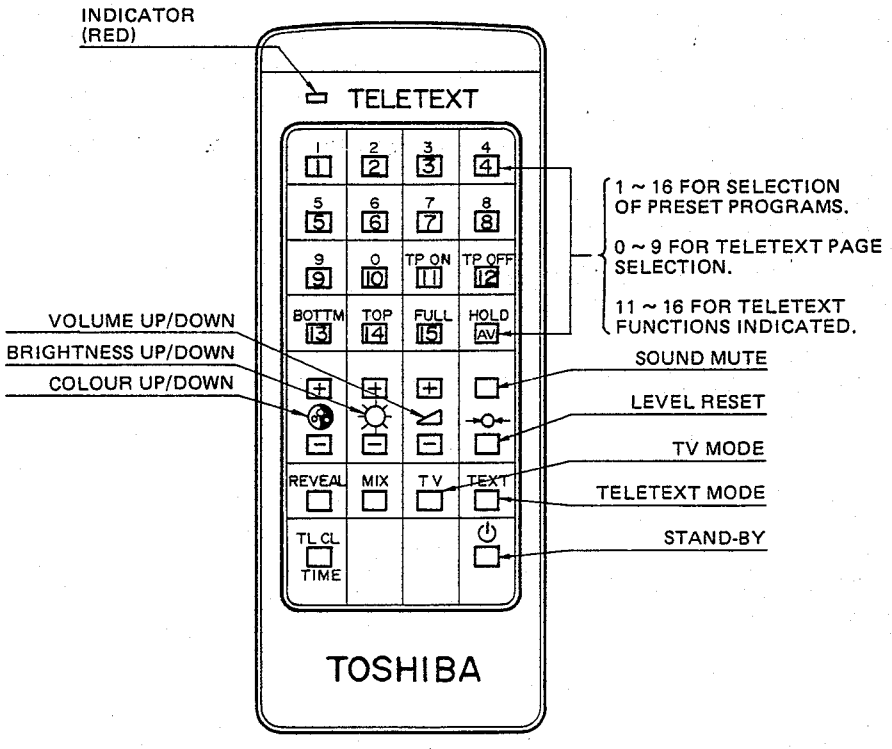
PRODUCT SAFETY NOTICE

Many electrical and mechanical components in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-ray radiation protection afforded them cannot necessarily be obtained by using replacements rated at higher voltages or wattage, etc. Components which have these special safety characteristics in this manual and its supplements are identified by shading on the schematic diagram and parts list. Before replacing any of these components read the parts list in this manual carefully. Substitute replacement components which do not have the same safety characteristics as specified in the parts list may create X-ray radiation.

FRONT CONTROL VIEW



Remote Hand Held Unit



WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION." "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 1 OF THIS MANUAL.

INSTALLATION AND SERVICE ADJUSTMENTS

1. GENERAL INFORMATION

Before this receiver leaves the factory all the internal adjustments are checked and correctly set for optimum colour and monochrome reception.
When the receiver is installed and tuned, some minor adjustments may be required due either to local reception conditions or to the actual location of the receiver.
Referring to the Operating instructions supplied with the receiver, switch on and, after selecting a channel, make any necessary adjustments to the customer controls.

2. +140V POWER SUPPLY ADJUSTMENT

CAUTION: The setting of the +140V supply affects the amount of e.h.t. generated. To prevent the generation of hazardous X-ray radiation the 'B+' voltage line must be accurately adjusted to +140V.

2.1 Tune in an active channel. Adjust the Brightness and Contrast controls for a normal picture.
2.2 Check that the mains input to the receiver is correct: 240V 50Hz.
2.3 Connect a high impedance voltmeter between top end lead of vertical type resistor R416 on the main panel and chassis (e.g. pin 39).
2.4 Adjust the Set +140V control, R851, on the main panel for +140V reading on the meter. Disconnect the meter.

3. HIGH VOLTAGE CHECK

CAUTION: There is no High Voltage adjustment on this chassis. The +140V power supply must be correctly adjusted to ensure that the e.h.t. generated remains within the stated limit.

3.1 Connect an accurate e.h.t. meter to the final anode of the C.R.T.
3.2 Switch the receiver on and set the Brightness and Contrast controls to minimum (zero beam current).
3.3 Observe the voltage meter. THe e.h.t. must not at any time exceed 28.5 kV.
3.4 Rotate the Brightness control to both extremes to ensure that the e.h.t. does not exceed the limit of 28.5 kV.

4. HORIZONTAL OSCILLATOR ADJUSTMENT

4.1 If the horizontal sync. is unstable, adjust the Horizontal Hold control R451 to stabilise, ensuring that the control is set to the center of the pull-in range.

5. WIDTH ADJUSTMENT

5.1 Set the Width control R356 so that the picture shows the sufficient width at right and left sides on screen.

6. VERTICAL OSCILLATOR ADJUSTMENT

6.1 If the picture 'rolls' or jitters vertically, adjust the Vertical Hold control R351 to stabilise.

7. HEIGHT ADJUSTMENT

7.1 To adjust the vertical amplitude of the picture reset the Height control R352, making the final adjustment to overscan the mask 2 cm at the top and bottom of the display.

8. FOCUS CONTROL

8.1 Adjust the Focus control of L.O.P.T. (T802) on Main panel for well defined scanning lines in the central area of the screen.

9. DELAYED R-F AGC Adjustment

9.1 Tune the receiver to the strongest local station.
9.2 Turn the AGC Delay control R151 fully counter-clockwise.
9.3 Adjust the AGC Delay control clockwise until the noise (snow) is reduced to minimum on the picture.

10. COLOUR SYNC. ADJUSTMENT

10.1 Tune to a colour programme and allow the receiver to warm up for five minutes.
10.2 Short circuit C512 on Main panel with a short jumper wire.
10.3 Connect pin 12 of IC501 to +12V line via a 10 k ohm resistor, this will disable the colour killer.
10.4 Coloured stripes will run across the screen if the sync. requires adjustment. To correct, adjust R552 untill the stripes remain stationary or drift slowly across the screen.
10.5 Remove the 10 k ohm resistor and jumper wire.

12. PAL MATRIX ADJUSTMENT

12.1 Inject a colour bar test signal.
12.2 Adjust the Colour control to obtain the correct colours.
12.3 If the PAL matrixing is incorrect a 'venetian blind' effect will appear on the screen.
12.4 If incorrect, first adjust the Delay Line Phase coil L551 to minimise the venetian blind effect.
12.5 Next, connect a capacitor (30 to 50pF) to the capacitor C512 in parallel; if the venetian blind effect increases, adjust 1H AMP ADJ. control R551 to minimise the effect.
12.6 If, after removing the capacitor, the effect persists, repeat items 12.4 and 12.5 until it is eliminated, even when the capacitor is connected.
12.7 After removing an additional capacitor (30 to 50pF), set Colour control to low saturation and adjust coil L552 get maximum colour saturation.

13. SOUND I.F. DETECTOR COIL ADJUSTMENT

13.1 Tune in a signal which uses a continuous tone for sound (e.g. 400Hz or 1kHz).
13.2 Connect the probe of the oscilloscope to pin 23 of IC101 on the Main panel.
13.3 Adjust the sound I-F Delector coil L602 for maximum detected signal amplitude on the oscilloscope.

14. C.R.T. GRAY SCALE ADJUSTMENT

14.1 Tune to an active channel.
14.2 Turn the Colour control to minimum.
14.3 Turn the Screen control on L.O.P.T. (T802) on Main panel fully counterclockwise.
14.4 Rotate the Red, Green and Blue Cut-off controls (R557, R558, R559) counterclockwise from the maximum, setting them so that the flat section of each knob lies parallel to the surface of the panel.
14.5 Set the Green and Blue Drive controls (R252, R253) on the C.R.T. Base panel to their mid-position.
14.6 Remove the 2-Pin Jumper (MF21) on the Teletext Panel.
14.7 Put the 2-Pin Jumper (MF-21) to 2-Pin Plug (P530) on the Main Panel. This reduces the Vertical scan to a single line.
14.8 Observing the cetre of the screen closely, gradually turn the Screen control clockwise until a single coloured line appears, continue turning until a single coloured line appears, continue turning until a second colour is just introduced alongside the first. Now turn the two Cut-off controls corresponding to these two colours fully counterclockwise, thus removing them from the screen.
14.9 Gradually turn the Screen control until the third colour just appears on the screen.
14.10 Adjust the two Cut-off controls set to minimum in item 14.8 to bring the levels of these two colours up to the level of the third. The resulting line will be white if the Cut-off controls are adjusted correctly.
14.11 Remove MF21 from P530, and then put MF21 back to the 2-Pin Plug (PF21) on the Teletext panel.
14.12 Turn the Brightness and Contrast controls to maximum.
14.13 Adjust the Blue and Green Drive cotnrols R253 and R252 to obtain the correct white-balance in the high-light areas of the picture.
14.14 Adjust the Brightness and Contrast controls to produce a dark gray raster, then check the white balance in the low brightness areas. If the white balance is not correct, adjust the appropriate Cut-off and Drive controls to obtain a good white balance in both the low-and high-light areas.
14.15 If a pattern has been used for these adjustments, select a channel showing a normal colour picture and adjust the Colour control for normal viewing.

15. PRE-SET BRIGHTNESS ADJUSTMENT

15.1 Tune to a colour programme.
15.2 Set the Contrast control to maximum and the Brightness to its mid-point.
15.3 Set the Colour control to its mid-point.
15.4 Set the Pre-set Brightness control R255 to its mid-point and allow the receiver to operate for five minutes in this state.
15.5 Observing the picture closely, adjust the Pre-set Brightness control to a position where the picture does not show evidence of 'blooming' in the high brightness areas or is too dark in the low-brightness areas.
15.6 Check that the Brightness and Contrast controls provide the correct variations in pictuer tones from one extreme to the other.
15.7 If the pictuer is not dark with the Brightness and Contrast controls set to minimum; or not sufficiently light with these controls at maximum, adjust the Pre-set Brightness control again to achieve acceptable limits.

16. COLOUR PURITY AND CONVERGENCE ADJUSTMENT

16.1 It should be remembered that the purity magnet and Deflection Yoke form part of the integrated tube components assembly.
As these were aligned and fixed during manufacture, it is advisable that the sealing compound should not be broken and the replacement of the whole picture tube with neck components should be taken for servicing.

PICTURE I-F SWEEP ALIGNMENT

GENERAL . . . . . Refer to Figure 1 for test equipment connection and alignment points.

PRELIMINARY STEPS . . . . . 1. Disconnect the solder link SL-1 (⊣◗⊢ see Figure 1) on the foil side of the Main Board.
2. Supply +12.0 volts to the Main Board.
3. Supply +8 volts bias to terminal "TP-14" on the Main Board.
4. Turn AGC DELAY Control (R151) on the Main Board fully clockwise.

SWEEP/MARKER GENERATOR . . . . Connect to the point ⓓ as shown in Figure 1 on the Main Board.

OSCILLOSCOPE . . . . . Connect with direct probe to terminal 45 on the Main Board through 100 k ohm resistor.

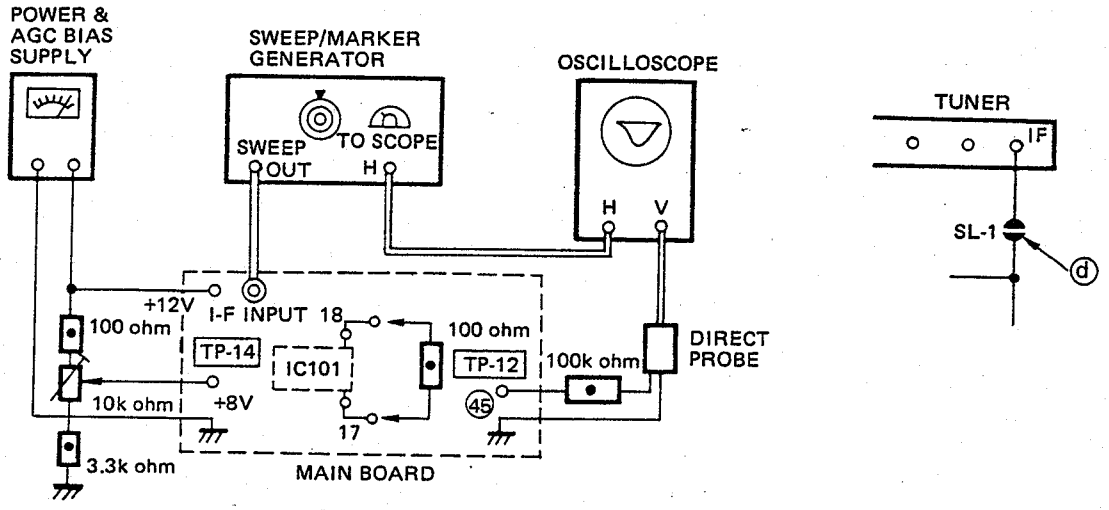


Figure 1. Picture I-F Sweep Alignment

STEP	SWEEP/MARKER GENERATOR	ADJUST	REMARKS
L103 ALIGNMENT Set Oscilloscope gain for 0.1 v/cm. Adjust sweep output for easy alignment. (See Figure 2.)			
Detector Coil	39.5MHz Marker "ON"	L103	Adjust L103 for maximum gain at 39.5MHz on SCOPE. (See Figure 2.)
OVERALL RESPONSE CHECK Observe with 0.5 volts pk to pk on the oscilloscope. Attach 100 ohm resistor between pins 17 and 18 of IC101 on the foil side of the Main Board.			
I.F. Overall Response	I.F. Overall Response should be as shown in Figure 3.		
After completing the above steps, disconnect the equipment and re-solder the solder links. Switch on the receiver, and adjust the AGC Delay control (R151) following DELAYED R-F AGC ADJUSTMENTS.			

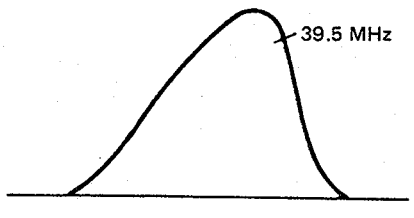


Figure 2. Magnified Response Curve

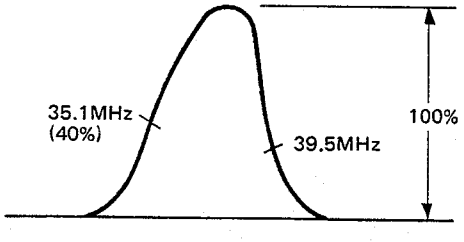


Figure 3. Overall Response Curve

AFC ALIGNMENT

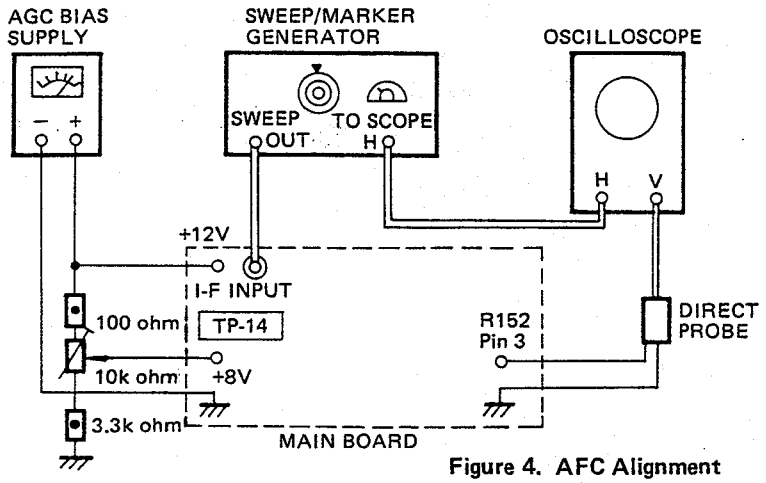
GENERAL . . . . . Refer to Figure 4 for alignment points and test equipment connection.

PRELIMINARY STEPS . . . . . 1. Disconnect the solder link SL-1, SL-3, SL-4 (—◖◗— see Figures 1 and 4) on the foil side of the Main Board.
2. Supply +12.0 volts to the Main Board.
3. Supply +8 volts bias to terminal "TP-14" on the Main Board.
4. Turn AGC DELAY Control (R151) on the Main Board fully clockwise.

SWEEP/MARKER GENERATOR . . . . Connect and tune following the same steps as given under PICTUER I-F SWEEP ALIGNMENT

DVM . . . . . Connect direct probe between pin 1 (+) and pin 3 (—) of terminals of R152.

OSCILLOSCOPE . . . . . Connect using direct probe to pin 3 of R152 on the Main Board.



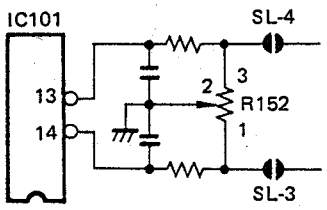


Figure 4. AFC Alignment

STEP	SWEEP/MARKER GENERATOR	ADJUST	REMARKS
1. AFC Balance	NO SIGNAL	R152	Ensure AFC switch is in "ON" position. Connect DVM (—) to pin 3 of R152 and (+) to pin 1 of R152. Adjust R152 (BALANCE ADJUST) for 0.0 volt reading on meter.
2. AFC Detector	39.5MHz.	L171	Remove the DVM. Connect Direct Probe to Terminal pin 3 of R152 on Main Board. Adjust L171 for the response shown in Figure 5.
After completing the above steps, disconnect the equipment and re-solder the solder links. Check AFC operation is normal. Readjust AGC DELAY control (R151) following DELAYED R-F AGC ADJUSTMENTS.			

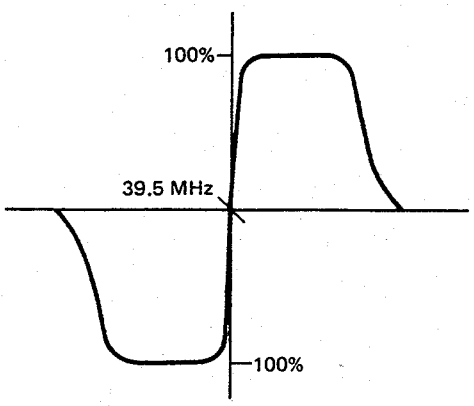


Figure 5. AFC Response

TELETEXT ALIGNMENT

SAMPLING CLOCK COIL ADJUSTMENT (L02)

1. Receive a teletext signal.
   (Set the TV in the Teletext mode.)
2. Adjust the sample clock coil (L02) to the position where the normal reception of teletext is obtained. (There must be no misoperation.)
3. Check the all text pages for normal reception.
4. If there is a misoperation, repeat the procedures 2 and 3 above.

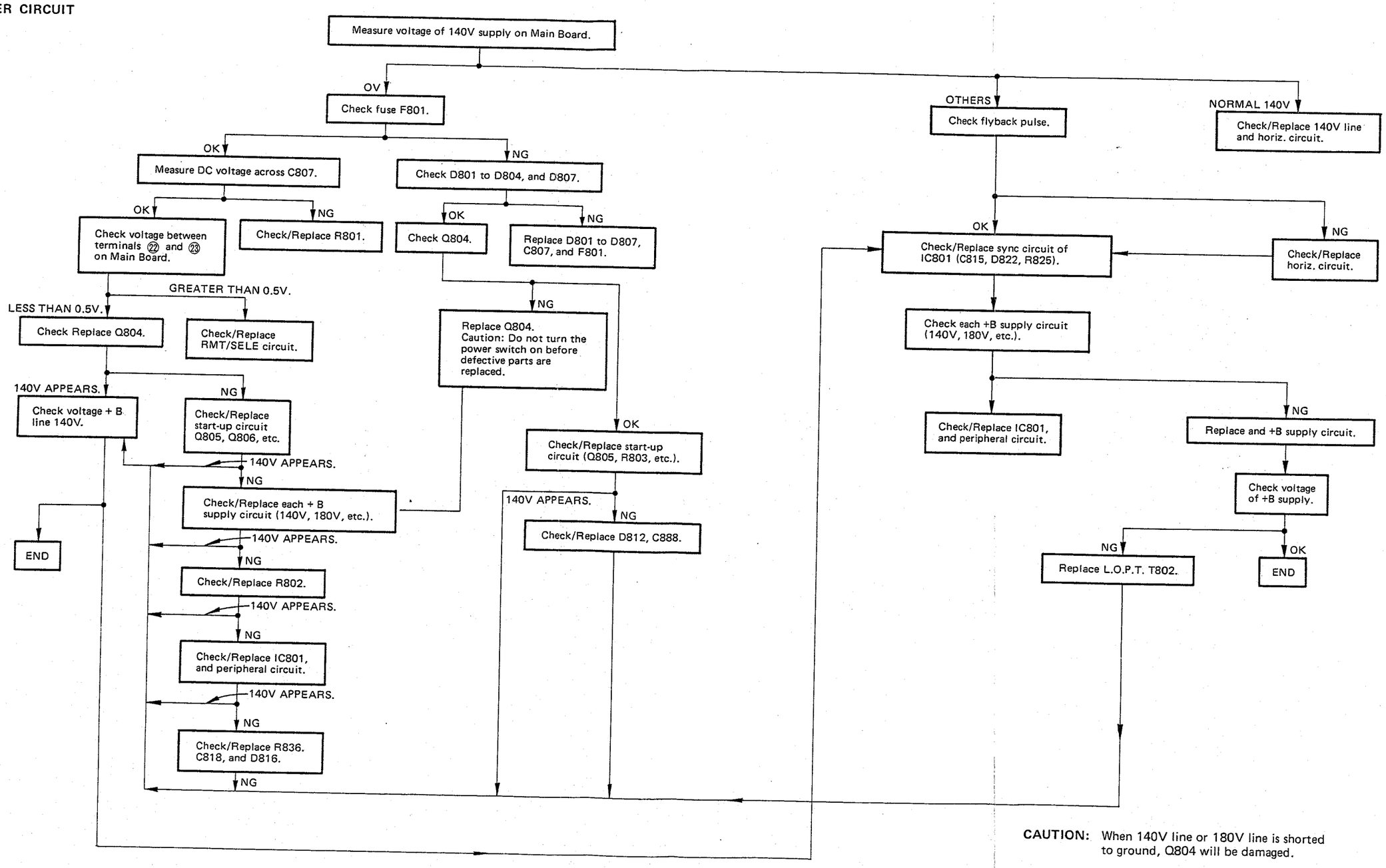
CHARACTER WHITE BALANCE ADJUSTMENT (RF55, RF56 and RF57)

1. Check the white balance of the regular TV picture for normal.
2. Receive the regular TV picture and set the Colour control to minimum.
3. Rotate VR (RF55, RF56, RF57) fully counterclockwise.
4. Remove 2-Pin Jumper (MF22) to open the terminal PF22 on the Teletext Board and put MF22 to 2-Pin plug (P530) to short between terminals Ⓙ and Ⓗ on the Main Board.
   Screen will show one horizontal line.
5. Rotate VR (RF57) to the position where green color just appears on the horizontal line.
6. Adjust VR (RF55, RF56) for the white line on screen.
7. Remove MF22 from P530 and then put MF22 to PF22 on the Teletext panel.
8. Check the white balance with a normal teletext signal received.

TROUBLESHOOTING CHARTS

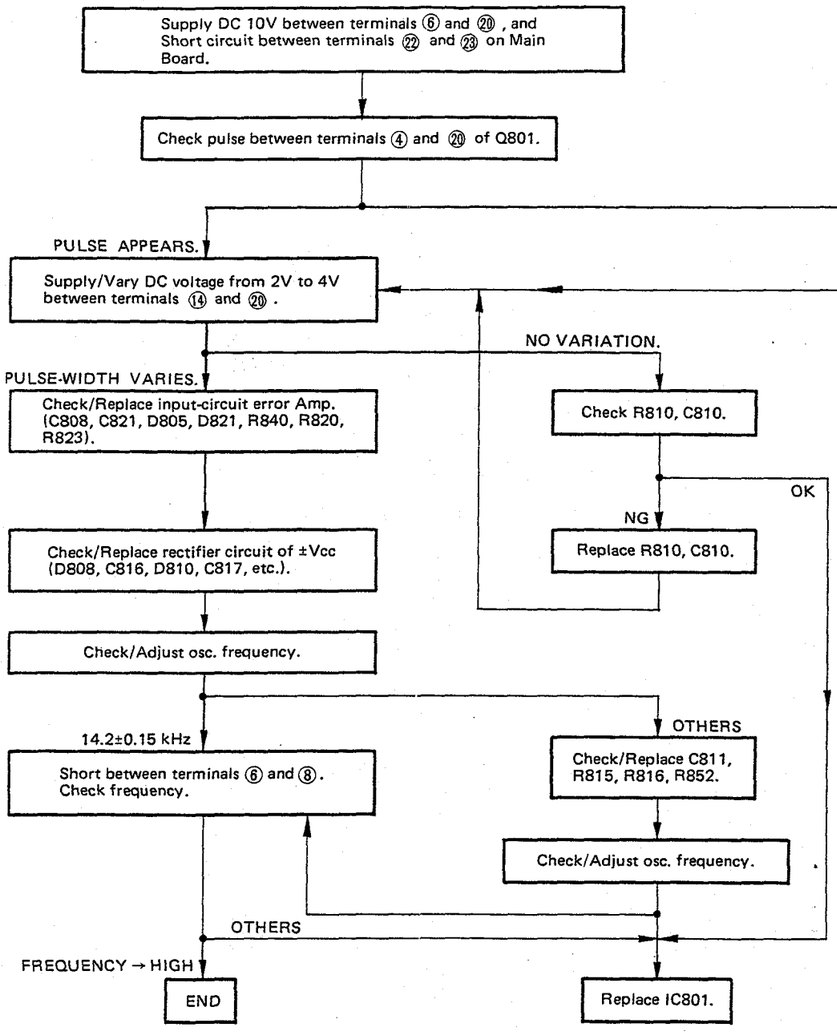
The following charts are devoted to troublehsooting which, if followed carefully, will assist you in tracking down a fault to the correct stage.
In order to utilize the charts (fault trees), firstly establish the complaint, i.e. — No Raster, No Sound.
Locate the chart applicable and then progress through the various alternatives until a final block indicates the off ending components or stage.

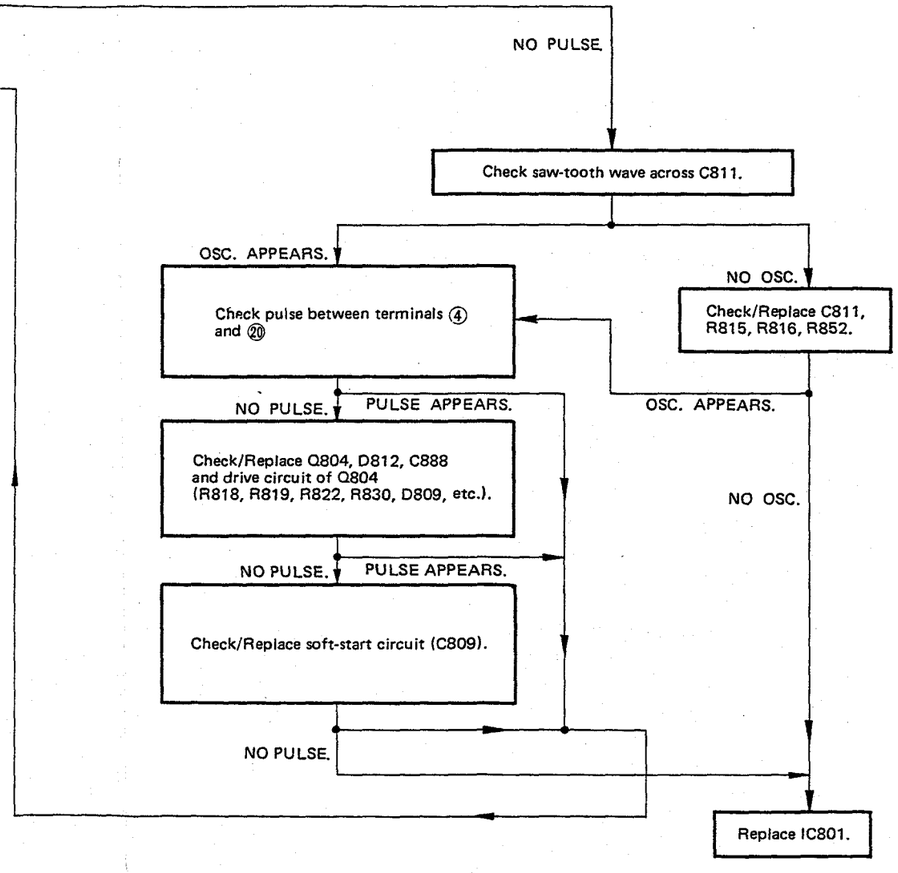
1. POWER CIRCUIT



CAUTION: When 140V line or 180V line is shorted to ground, Q804 will be damaged.

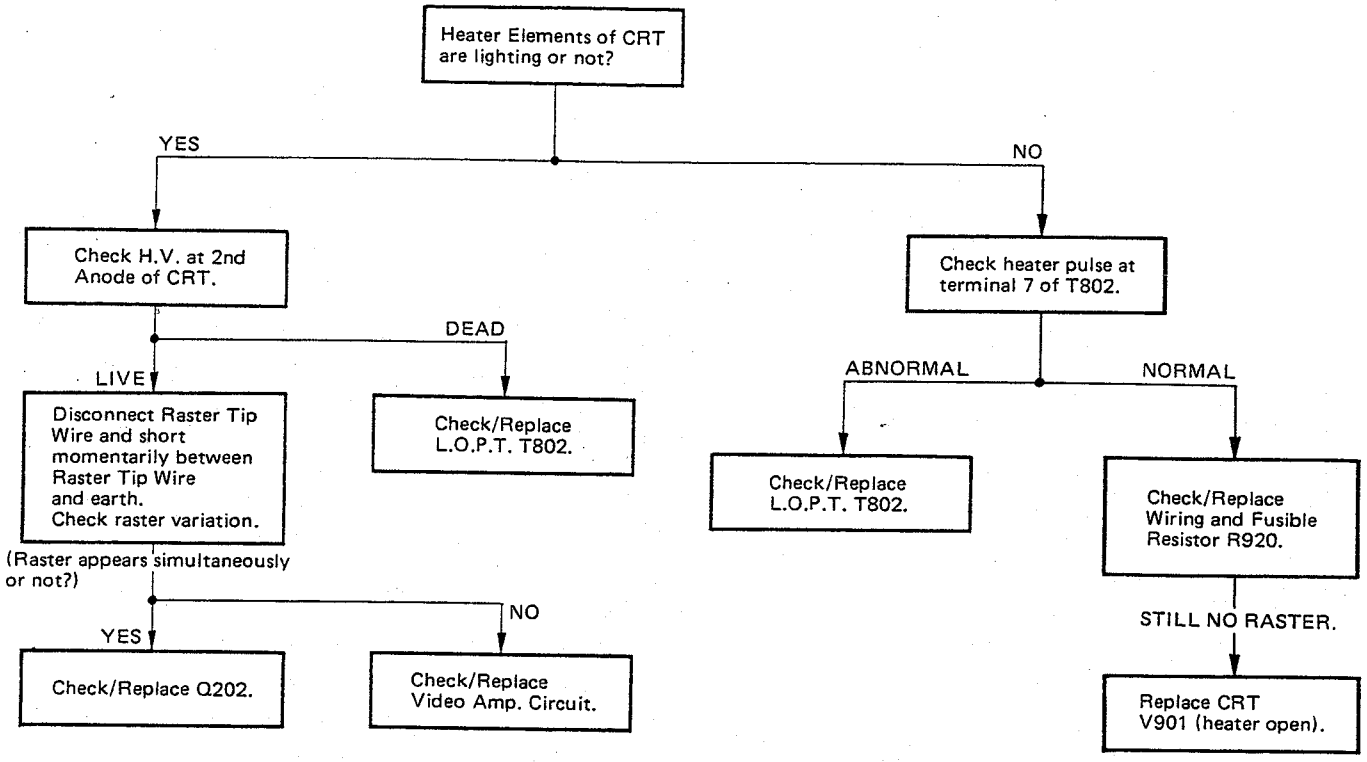
* IC801 AND PERIPHERAL CIRCUIT


Supply DC 10V between terminals ⑥ and ⑳ , and Short circuit between terminals ㉒ and ㉓ on Main Board.
Check pulse between terminals ④ and ⑳ of Q801.
PULSE APPEARS.
Supply/Vary DC voltage from 2V to 4V between terminals ⑭ and ⑳ .
NO VARIATION.
PULSE-WIDTH VARIES.
Check/Replace input-circuit error Amp. (C808, C821, D805, D821, R840, R820, R823).
Check R810, C810.
OK
NG
Replace R810, C810.
Check/Replace rectifier circuit of ±Vcc (D808, C816, D810, C817, etc.).
Check/Adjust osc. frequency.
14.2±0.15 kHz
Short between terminals ⑥ and ⑧. Check frequency.
OTHERS
Check/Replace C811, R815, R816, R852.
Check/Adjust osc. frequency.
OTHERS
FREQUENCY → HIGH
END
Replace IC801.

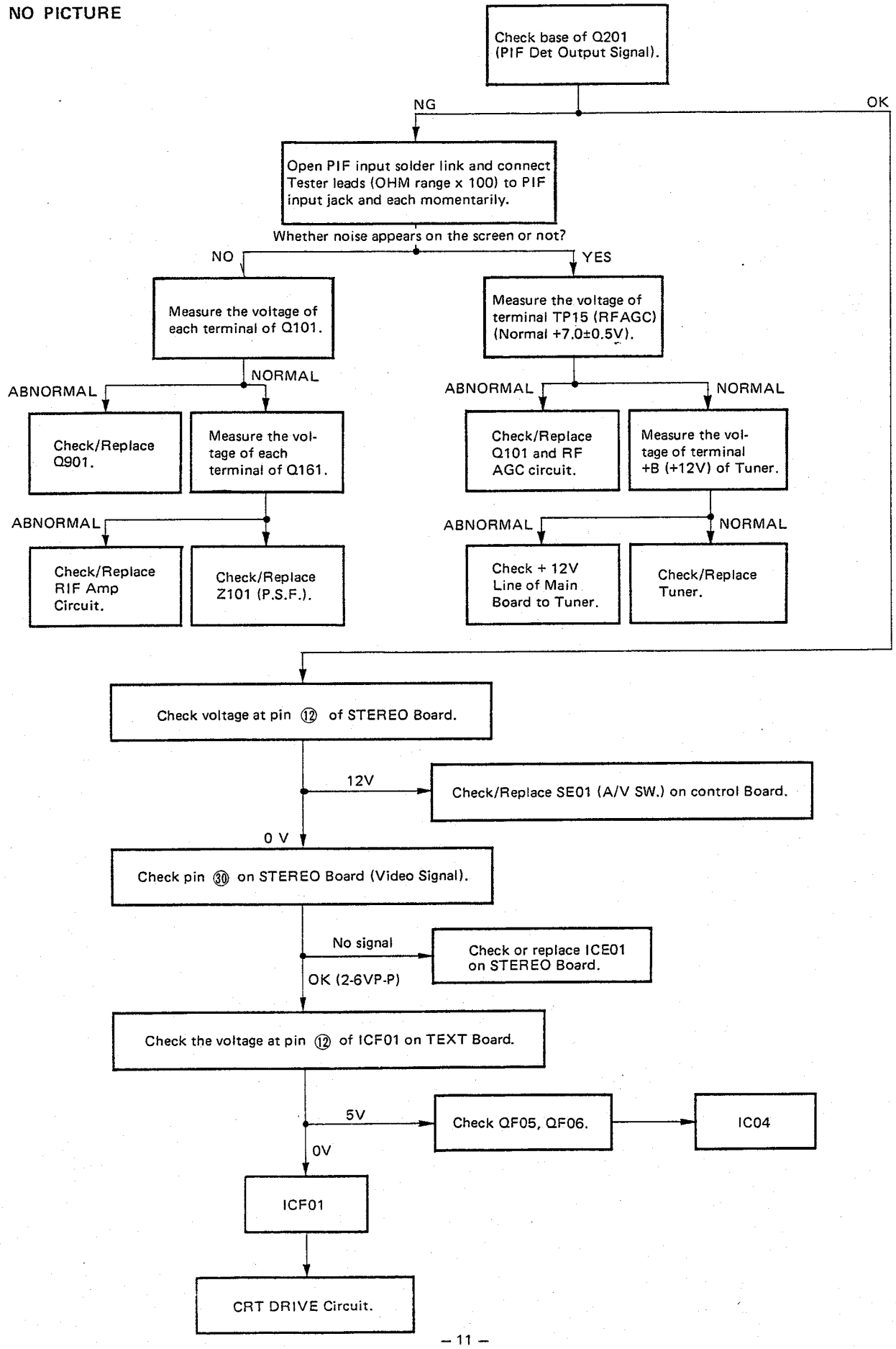


CAUTION: Before testing IC801 and peripheral parts, turn the main switch off.

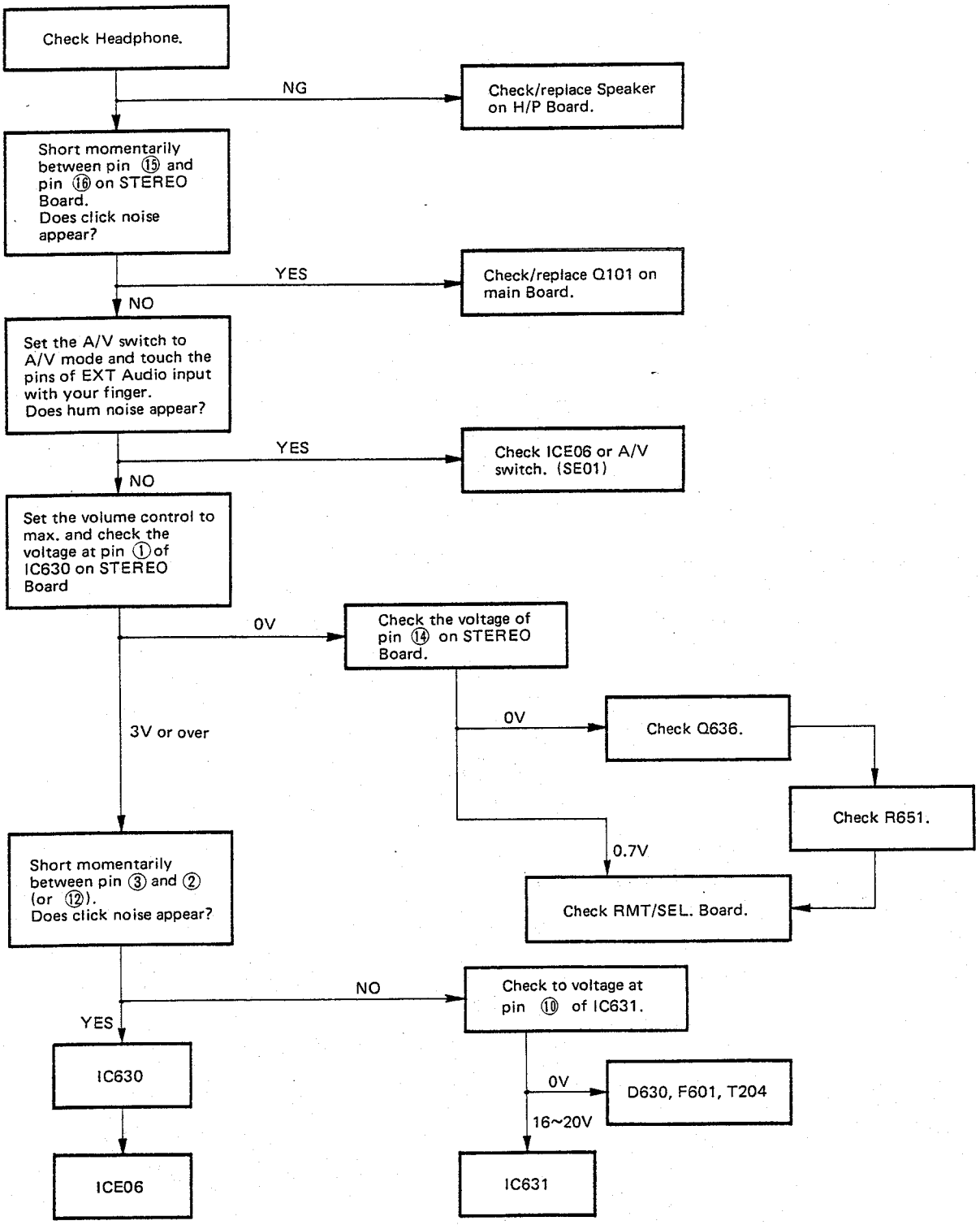
2. NO RASTER (SOUND OK)



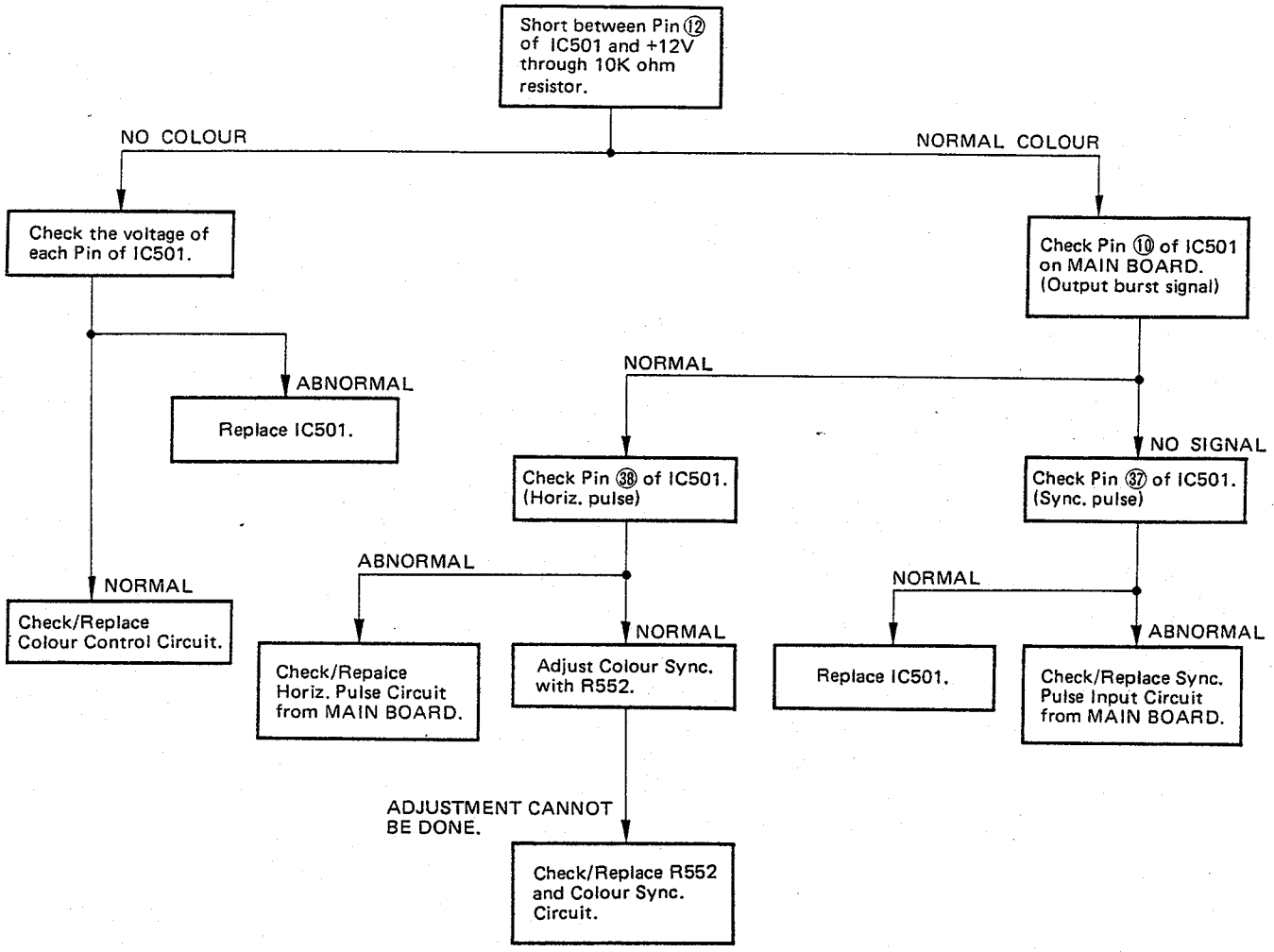
3. NO PICTURE


Check base of Q201 (PIF Det Output Signal).
NG
OK
Open PIF input solder link and connect Tester leads (OHM range x 100) to PIF input jack and each momentarily.
Whether noise appears on the screen or not?
NO
YES
Measure the voltage of each terminal of Q101.
Measure the voltage of terminal TP15 (RFAGC) (Normal +7.0±0.5V).
NORMAL
ABNORMAL
ABNORMAL
NORMAL
Check/Replace Q901.
Measure the voltage of each terminal of Q161.
Check/Replace Q101 and RF AGC circuit.
Measure the voltage of terminal +B (+12V) of Tuner.
ABNORMAL
NORMAL
ABNORMAL
NORMAL
Check/Replace RIF Amp Circuit.
Check/Replace Z101 (P.S.F.).
Check + 12V Line of Main Board to Tuner.
Check/Replace Tuner.
Check voltage at pin ⑫ of STEREO Board.
12V
Check/Replace SE01 (A/V SW.) on control Board.
0 V
Check pin ㉚ on STEREO Board (Video Signal).
No signal
Check or replace ICE01 on STEREO Board.
OK (2-6VP-P)
Check the voltage at pin ⑫ of ICF01 on TEXT Board.
5V
Check QF05, QF06.
IC04
0V
ICF01
CRT DRIVE Circuit.

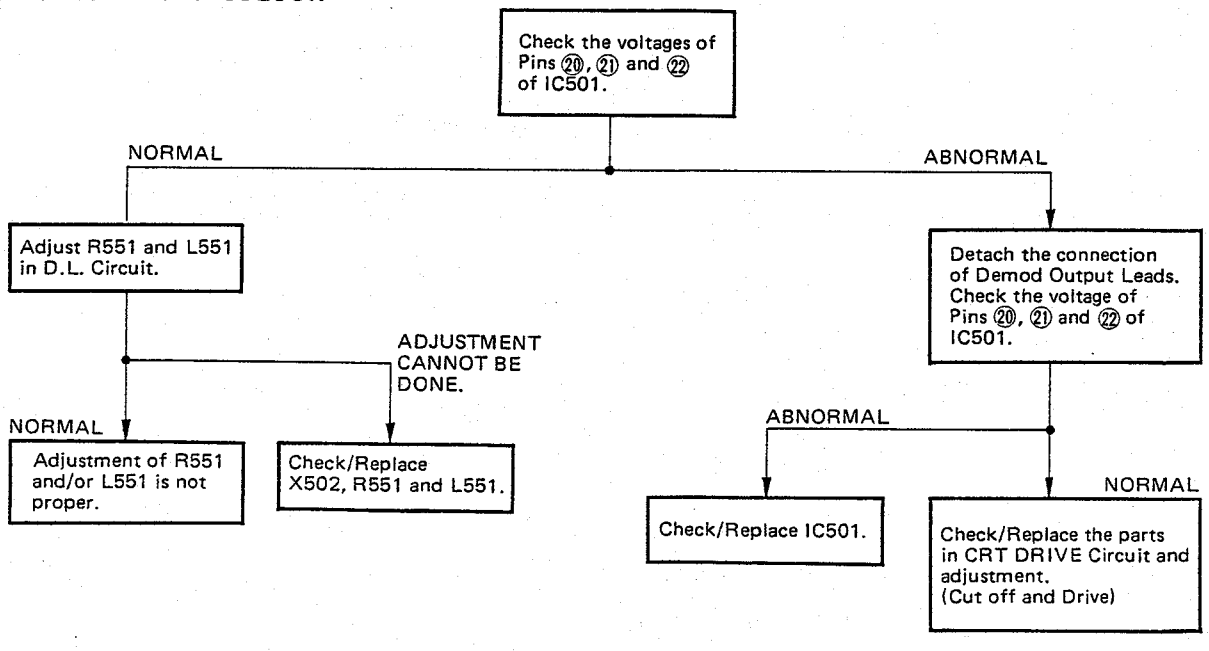
4. NO SOUND


Check Headphone.
NG
Check/replace Speaker on H/P Board.
Short momentarily between pin ⑮ and pin ⑯ on STEREO Board. Does click noise appear?
YES
Check/replace Q101 on main Board.
NO
Set the A/V switch to A/V mode and touch the pins of EXT Audio input with your finger. Does hum noise appear?
YES
Check ICE06 or A/V switch. (SE01)
NO
Set the volume control to max. and check the voltage at pin ① of IC630 on STEREO Board
0V
Check the voltage of pin ⑭ on STEREO Board.
3V or over
0V
Check Q636.
Check R651.
0.7V
Check RMT/SEL. Board.
Short momentarily between pin ③ and ② (or ⑫). Does click noise appear?
NO
Check to voltage at pin ⑩ of IC631.
YES
IC630
0V
D630, F601, T204
16~20V
ICE06
IC631

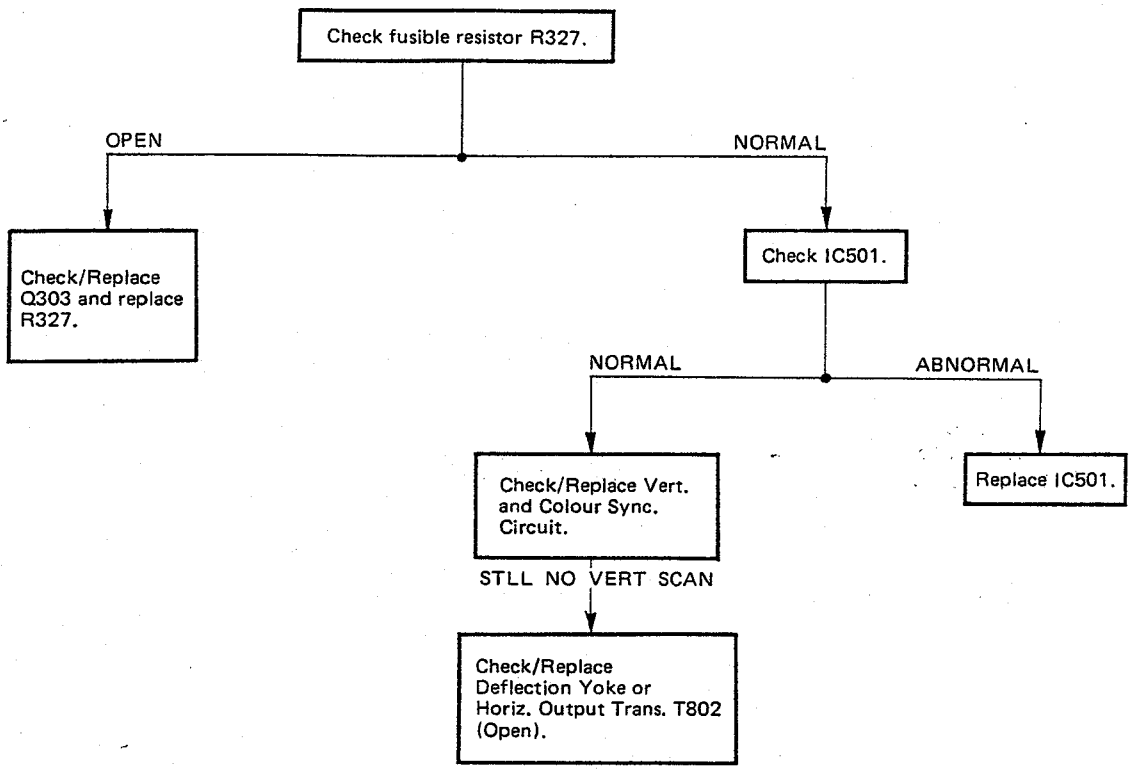
5. NO COLOUR


Short between Pin ⑫ of IC501 and +12V through 10K ohm resistor.
NO COLOUR
NORMAL COLOUR
Check the voltage of each Pin of IC501.
Check Pin ⑩ of IC501 on MAIN BOARD. (Output burst signal)
ABNORMAL
Replace IC501.
NORMAL
NO SIGNAL
Check Pin ㊳ of IC501. (Horiz. pulse)
Check Pin ㊲ of IC501. (Sync. pulse)
NORMAL
Check/Replace Colour Control Circuit.
ABNORMAL
NORMAL
ABNORMAL
Check/Repalce Horiz. Pulse Circuit from MAIN BOARD.
NORMAL
Adjust Colour Sync. with R552.
Replace IC501.
Check/Replace Sync. Pulse Input Circuit from MAIN BOARD.
ADJUSTMENT CANNOT BE DONE.
Check/Replace R552 and Colour Sync. Circuit.

6. SPECIFIC TINTED COLOUR


Check the voltages of Pins ⑳, ㉑ and ㉒ of IC501.
NORMAL
ABNORMAL
Adjust R551 and L551 in D.L. Circuit.
Detach the connection of Demod Output Leads. Check the voltage of Pins ⑳, ㉑ and ㉒ of IC501.
ADJUSTMENT CANNOT BE DONE.
NORMAL
ABNORMAL
Adjustment of R551 and/or L551 is not proper.
Check/Replace X502, R551 and L551.
Check/Replace IC501.
NORMAL
Check/Replace the parts in CRT DRIVE Circuit and adjustment. (Cut off and Drive)

7. NO VERT. SCAN (ONE HORIZ. LINE RASTER)



8. OUT OF VERT. SYNC. AND HORIZ. SYNC.

Check/Replace Sync. Circuit from pin ㊵ of IC501 to pin ㊲ or IC501.

9. OUT OF VERT. SYNC.

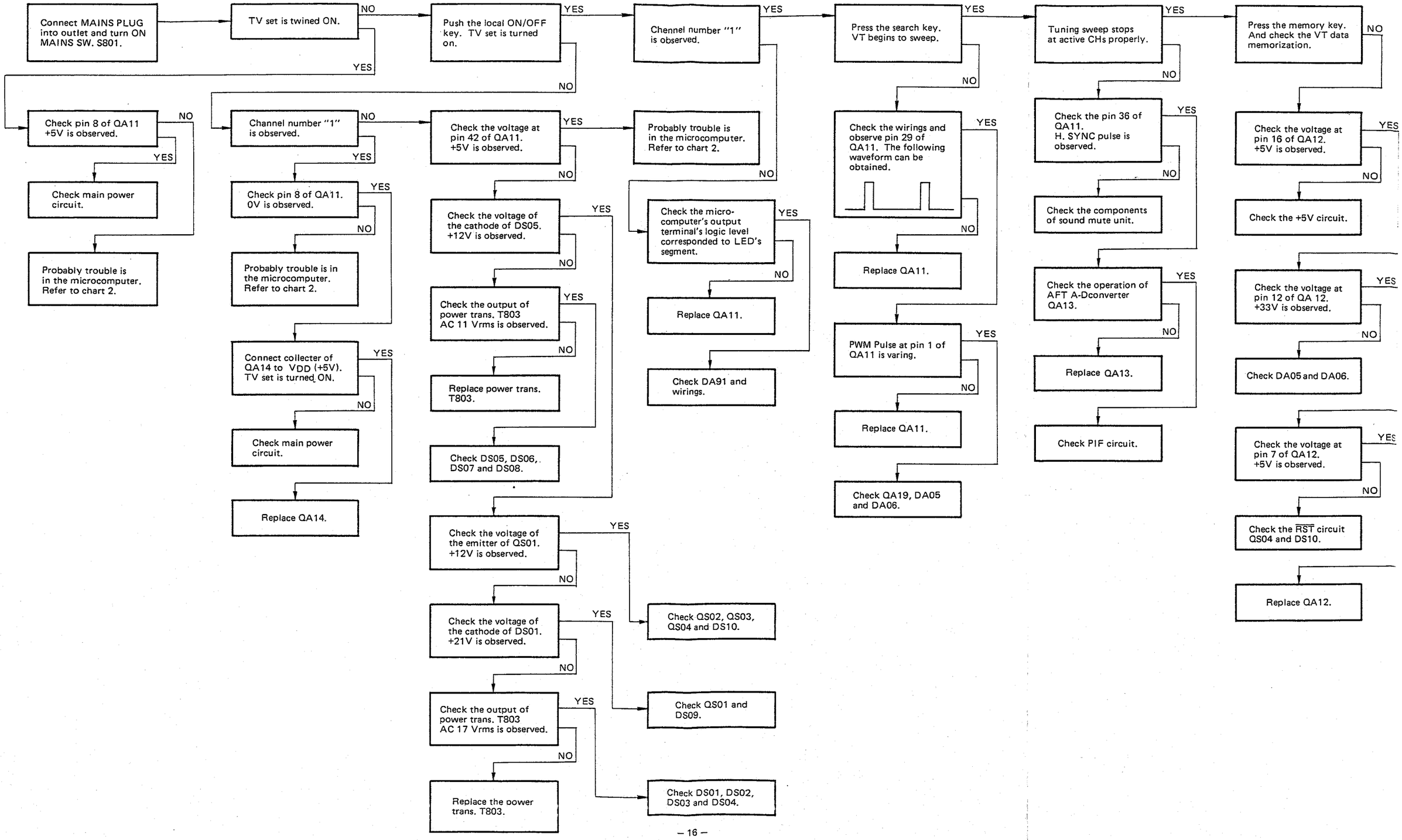
Check/Replace Vert. OSC Circuit and Vert. Hold Circuit connected to Pins ㉖, ㉗ and ㉙ of IC501 Check/Replace IC501.

10. OUT OF HORIZ. SYNC.

Check/Replace Hosiz. OSC Circuit, Horiz. Hold and Horiz. AFC Circuit connected to Pins ㉝ and ㉞ of IC501. Check/Replace IC501.

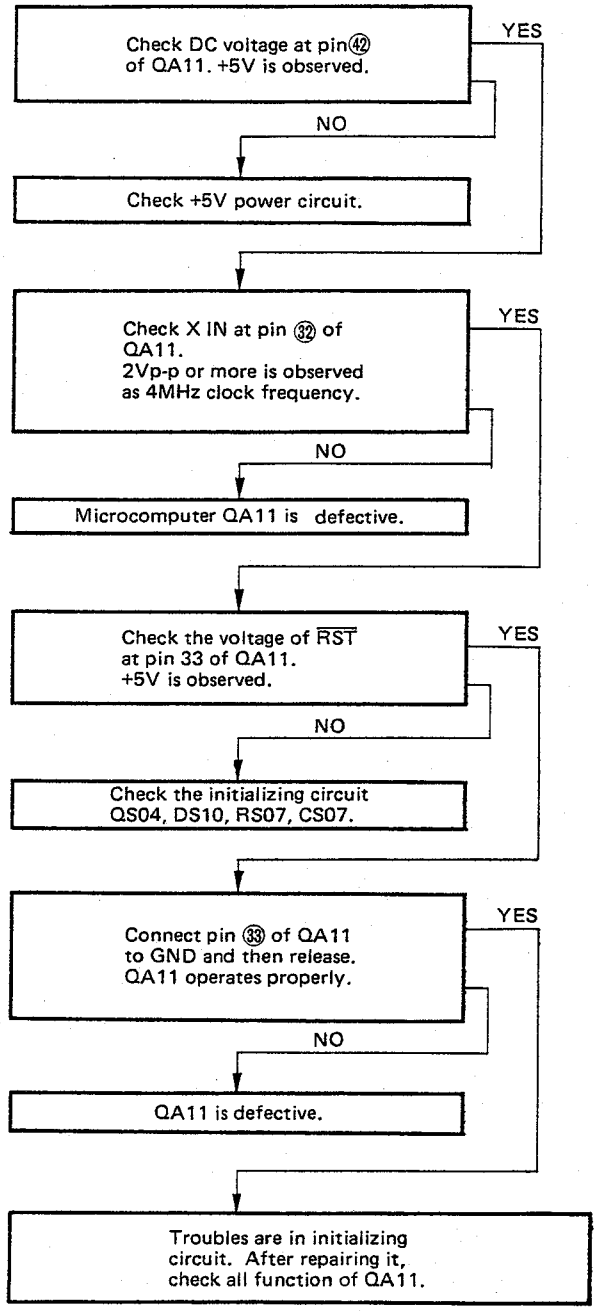
11. CHANNEL SELECTOR TROUBLE

[CHART 1]


Connect MAINS PLUG into outlet and turn ON MAINS SW. S801.
TV set is twined ON.
NO
YES
Push the local ON/OFF key. TV set is turned on.
YES
NO
Chennel number "1" is observed.
YES
NO
Press the search key. VT begins to sweep.
YES
NO
Tuning sweep stops at active CHs properly.
YES
NO
Press the memory key. And check the VT data memorization.
NO
Check pin 8 of QA11 +5V is observed.
NO
YES
Check main power circuit.
Probably trouble is in the microcomputer. Refer to chart 2.
Channel number "1" is observed.
NO
YES
Check pin 8 of QA11. 0V is observed.
YES
NO
Probably trouble is in the microcomputer. Refer to chart 2.
Connect collecter of QA14 to VDD (+5V). TV set is turned ON.
YES
NO
Check main power circuit.
Replace QA14.
Check the voltage at pin 42 of QA11. +5V is observed.
YES
NO
Check the voltage of the cathode of DS05. +12V is observed.
YES
NO
Check the output of power trans. T803 AC 11 Vrms is observed.
YES
NO
Replace power trans. T803.
Check DS05, DS06, DS07 and DS08.
Probably trouble is in the microcomputer. Refer to chart 2.
NO
Check the micro-computer's output terminal's logic level corresponded to LED's segment.
YES
NO
Replace QA11.
Check DA91 and wirings.
Check the voltage of the emitter of QS01. +12V is observed.
YES
NO
Check QS02, QS03, QS04 and DS10.
Check the voltage of the cathode of DS01. +21V is observed.
YES
NO
Check QS01 and DS09.
Check the output of power trans. T803 AC 17 Vrms is observed.
YES
NO
Check DS01, DS02, DS03 and DS04.
Replace the power trans. T803.
Check the wirings and observe pin 29 of QA11. The following waveform can be obtained.
YES
NO
Replace QA11.
PWM Pulse at pin 1 of QA11 is varing.
YES
NO
Replace QA11.
Check QA19, DA05 and DA06.
Check the pin 36 of QA11. H. SYNC pulse is observed.
YES
NO
Check the components of sound mute unit.
Check the operation of AFT A-Dconverter QA13.
YES
NO
Replace QA13.
Check PIF circuit.
Check the voltage at pin 16 of QA12. +5V is observed.
YES
NO
Check the +5V circuit.
Check the voltage at pin 12 of QA 12. +33V is observed.
YES
NO
Check DA05 and DA06.
Check the voltage at pin 7 of QA12. +5V is observed.
YES
NO
Check the RST circuit QS04 and DS10.
Replace QA12.

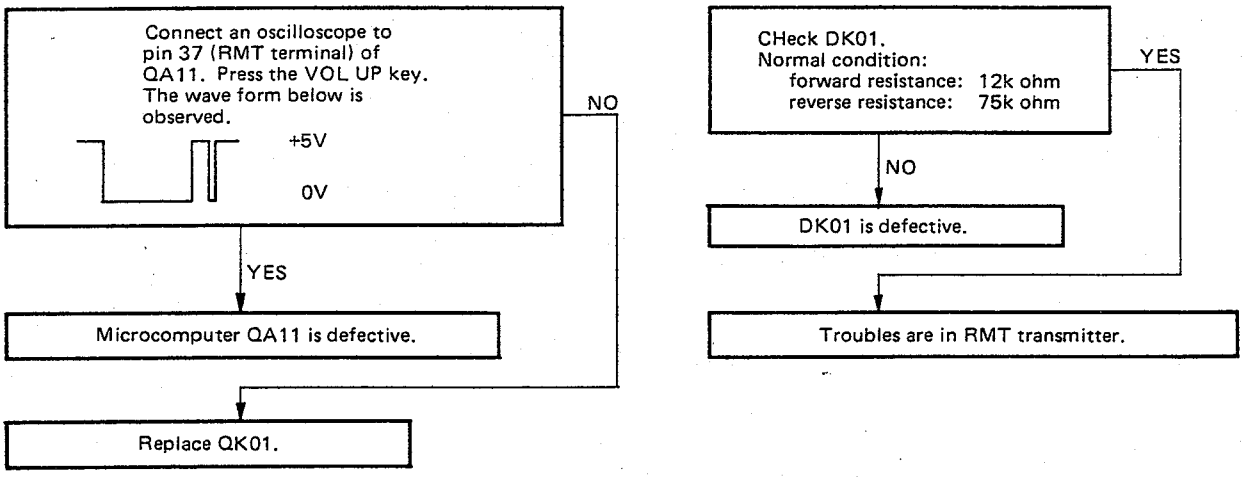
[CHART 2] Microcomputer (QA11) Operation Check

Note: Before checking Microcomputer, check that control buttons and their connection work properly.

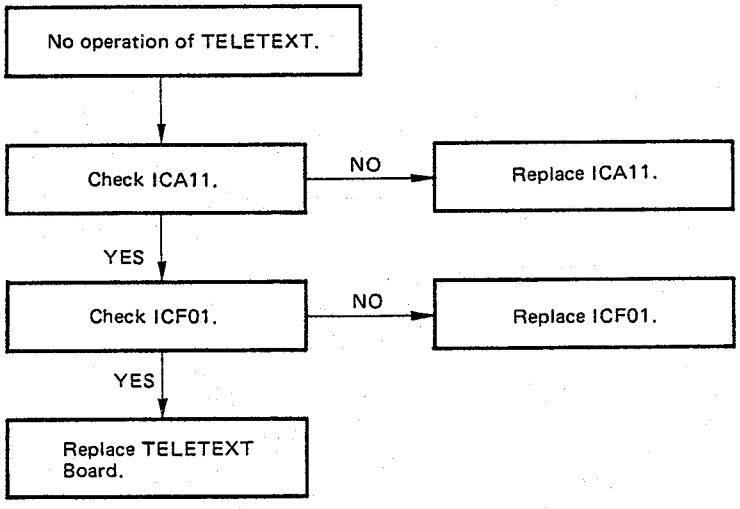

Check DC voltage at pin㊷ of QA11. +5V is observed.
YES
NO
Check +5V power circuit.
Check X IN at pin ㉜ of QA11. 2Vp-p or more is observed as 4MHz clock frequency.
YES
NO
Microcomputer QA11 is defective.
Check the voltage of $\overline{RST}$ at pin 33 of QA11. +5V is observed.
YES
NO
Check the initializing circuit QS04, DS10, RS07, CS07.
Connect pin ㉝ of QA11 to GND and then release. QA11 operates properly.
YES
NO
QA11 is defective.
Troubles are in initializing circuit. After repairing it, check all function of QA11.

[CHART 3] Remote Control Operation Check

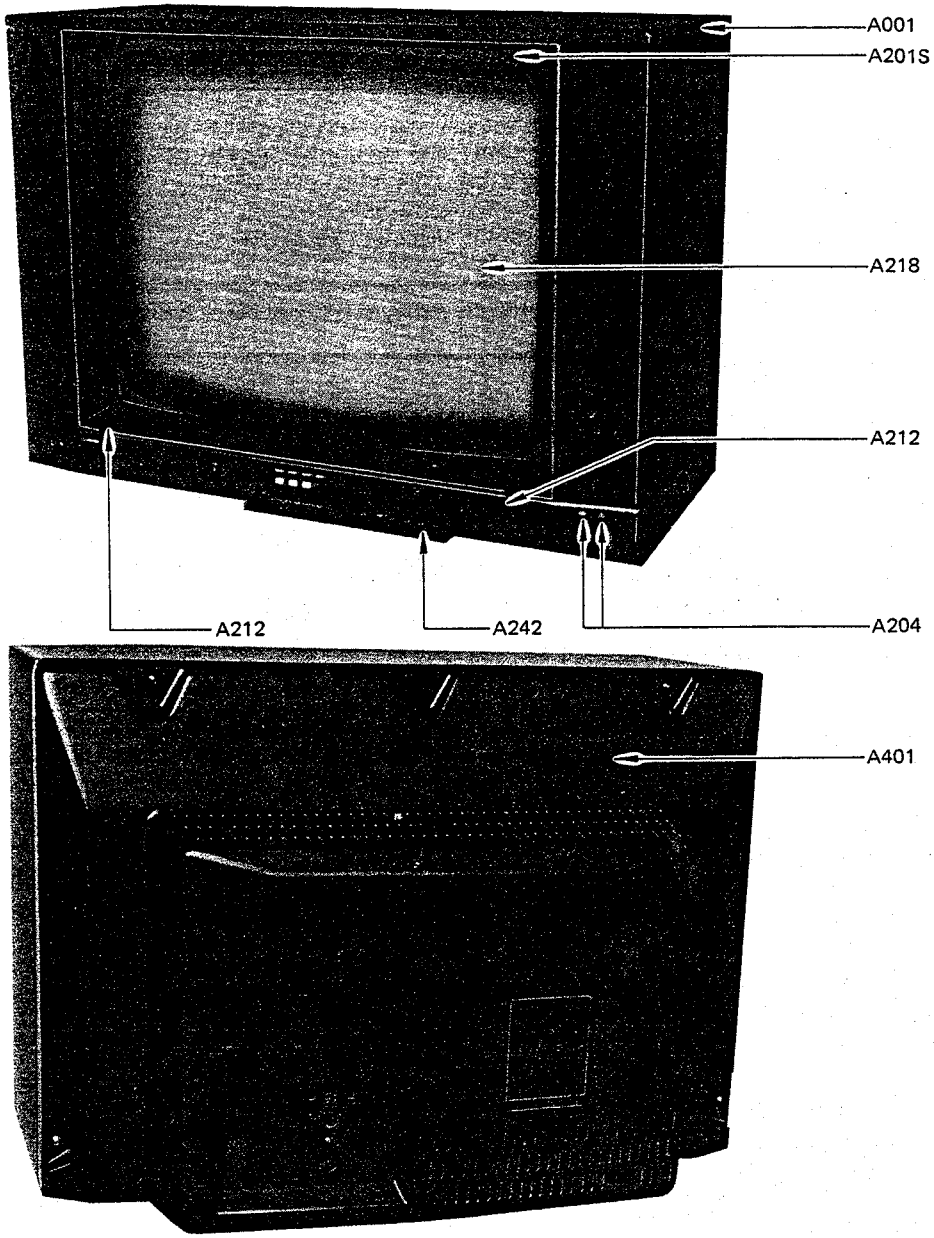
Note: Before checking RMT operation, check that local key operation is proper.



12. TELETEXT TROUBLE



CABINET VIEW AND REPLACEMENT PARTS LIST



CABINET PARTS

Reference No.	Part No.	Description
A001	23887692	Wood Cabinet
A201S	23885904	Front Panel
A204	23874711	Button, Square 20 x 20
A207	23886878	Lens
A212	23877057	Retainer, Filter Glass Holding
A213	23846743	Piece, Filter Glass Holding, 4 mm
A218	23827768	Filter Glass
A219	23730979	Special Screw For Glass
A242	23990994	Door
A401	23990992	Back Cover

Reference No.	Part No.	Description
A411	23989101	Label, Model Number
A701	23925026	Case
A702	23933416	Packing, Bottom
A703	23933417	Packing, Top
A710	23989099	Label, Model Number, Carton
K902	23120820	Remote Control Hand Held Unit, CT-995
Y101	23982690	Owner's Manual
Y140	23835809	Stand
Y201	23835805	Assembled Shelf

CHASSIS PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 1 OF THIS MANUAL.

CAUTION: The shaded areas and ⚠ marks in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types indentical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 1. Do not degrade the safety of the receiver through improper servicing.

NOTICE: The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.

Model 261T4B

ABBREVIATIONS:

Capacitors . . . . CD: Ceramic Disk, PF: Plastic Film, EL: Electrolytic
Resistors . . . . . CF: Carbon Film, CC: Carbon Composition, OMF: Oxide Metal Film, VR: Variable Resistor. MF: Metal Film, FR: Fusible Resistor
(All CD and PF capacitors are ±5%, 50v and all resistors, ±5%, 1/6w unless otherwise noted.)

Location No.	Part No.	Description
CAPACITORS		
C01	24636010	EL, 1μF, 50V
C02	24634100	EL, 10μF, 25V
C03	24212102	CD, 1000pF, ±10%
C04	24436331	CD, 330pF
C05	24436470	CD, 47pF
C06	24538104	PF, 0.1μF
C07	24232103	CD, 0.01μF, +80%, -20%
C08	24436470	CD, 47pF
C09	24353160	CD, 16pF
C11	24538104	PF, 0.1μF
C13	24636010	EL, 1μF, 50V
C14	24634100	EL, 10μF, 25V
C15	24593392	PF, 3900pF
C16	24636010	EL, 1μF, 50V
C17	24538104	PF, 0.1μF
C18	24634101	EL, 100μF, 25V
C19	24212102	CD, 1000pF, ±10%
C20	24212102	CD, 1000pF, ±10%
C21	24212102	CD, 1000pF, ±10%
C22	24633101	EL, 100μF, 16V
C32	24212102	CD, 1000pF, ±10%
C101	24202102	CD, 1000pF, ±10%
C102	24612102	CD, 1000pF, ±10%
C103	24232103	CD, 0.01μF, +80%, -20%
C104	24232103	CD, 0.01μF, +80%, -20%
C105	24635479	EL, 4.7μF, 35V
C106	24617969	EL, 0.22μF, 50V
C107	24636100	EL, 10μF, 50V
C108	24232103	CD, 0.01μF, +80%, -20%
C111	24212222	CD, 2200pF, ±10%

Location No.	Part No.	Description
C115	24212102	CD, 1000pF, ±10%
C161	24212102	CD, 1000pF, ±10%
C162	24232102	CD, 0.01μF, +80%, -20%
C163	24212102	CD, 1000pF, ±10%
C171	24212102	CD, 1000pF, ±10%
C172	24212102	CD, 1000pF, ±10%
C174	24436130	CD, 13pF
C175	24436020	CD, 2pF, ±0.25pF
C176	24436020	CD, 2pF, ±0.25pF
C177	24085031	EL, 1μF, ±20%, 25V, Non-Polar
C202	24436121	CD, 120pF
C204	24636010	EL, 1μF, 50V
C207	24633330	EL, 33μF, 16V
C240	24636479	EL, 4.7μF, 50V
C242	24636010	EL, 1μF, 50V
C301	24636010	EL, 1μF, 50V
C302	24232103	CD, 0.01μF, +80%, -20%
C303	24212561	CD, 560pF, ±10%
C304	24593122	PF, 1200pF
C305	24591333	PF, 0.033μF
C306	24538224	PF, 0.22μF
C307	24436101	CD, 100pF
C309	24617981	EL, 2.2μF, ±10%, 50V
C310	24636478	EL, 0.47μF, 50V
C311	24635471	EL, 470μF, 35V
C312	24232103	CD, 0.01μF, +80%, -20%
C313	24636101	EL, 100μF, 50V
C316	24796332	EL, 3300μF, 35V
C317	24617997	EL, 2.2μF, 50V
C319	24636478	EL, 0.47μF, 50V

Location No.	Part No.	Description
C320	24538104	PF, 0.1µF
C322	24214391	CD, 390pF, ±10%, 500V
C361	24530104	PF, 0.1µF, ±10%, 63V
C362	24530104	PF, 0.1µF, ±10%, 63V
C363	24635470	EL, 47µF, 35V
C364	24635471	EL, 470µF, 35V
C366	24095940	PF, 1.5µF, ±10%, 100V
C367	24829243	PF, 0.024µF, 400V
C367 or	24085030	EL, 0.47µF, 25V, Non-Polar
C371	24591682	PF, 6800pF
C391	24603104	PF, 0.1µF, 100V
C401	24867912	PF, 9100pF
C402	24636478	EL, 0.47µF, 50V
C403	24598562	PF, 5600pF
C405	24598302	PF, 3000pF
C406	24636229	EL, 2.2µF, 50V
C407	24636229	EL, 2.2µF, 50V
C408	24635100	EL, 10µF, 35V
C409	24232103	CD, 0.01µF, +80%, -20%
C410	24212152	CD, 1500pF, ±10%
C415	24095904	PF, 0.047µF, 250V
C416	24214271	CD, 270pF, ±10%, 500V
C417	24214222	CD, 2200pF, ±10%, 500V
C419	24095959	PF, 0.36µF, 200V
C441	24214221	CD, 220pF, ±10%, 500V
C445	24095903	PF, 0.056µF, 250V
C447	24640977	EL, 4.7µF, 250V
C448	24633222	EL, 2200µF, 16V
C449	24633331	EL, 330µF, 16V
C461	24215821	CD, 820pF, ±10%, 1kV
C463	24214222	CD, 2200pF, ±10%, 500V
⚠ C464	24442221	CD, 220pF, ±10%, 2kV
C466	24640985	EL, 470µF, 160V
⚠ C467	24095517	PF, 7500pF, 1600V
⚠ C470	24095518	PF, 8200pF, 1600V
C501	24436180	CD, 18pF
C502	24436100	CD, 10pF, ±0.25pF
C504	24636010	EL, 1µF, 50V
C506	24232103	CD, 0.01µF, +80%, -20%
C507	24232103	CD, 0.01µF, +80%, -20%
C508	24240160	CD, 16pF, ±10%
C509	24232103	CD, 0.01µF, +80%, -20%
C510	24232103	CD, 0.01µF, +80%, -20%
C511	24232103	CD, 0.01µF, +80%, -20%
C512	24356121	CD, 120pF
C513	24232103	CD, 0.01µF, +80%, -20%
C514	24636478	EL, 0.47µF, 50V
C515	24436200	CD, 20pF
C516	24353330	CD, 33pF
C517	24353680	CD, 68pF
C518	24636479	EL, 4.7µF, 50V
C519	24591223	PF, 0.022µF
C520	24591223	PF, 0.022µF

Location No.	Part No.	Description
C523	24530473	PF, 0.047µF, ±10%, 63V
C524	24436270	CD, 27pF
C527	24636100	EL, 10µF, 50V
C531	24212391	CD, 390pF, ±10%
C532	24212271	CD, 270pF, ±10%
C533	24212561	CD, 560pF, ±10%
C601	24436470	CD, 47pF
C602	24436470	CD, 47pF
C603	24232103	CD, 0.01µF, +80%, -20%
C604	24591332	PF, 3300pF
C606	24636010	EL, 1µF, 50V
C608	24636479	EL, 4.7µF, 50V
C617	24353620	CD, 62pF
C631	24538473	PF, 0.047µF
C632	24538123	PF, 0.012µF
C633	24538224	PF, 0.22µF
C634	24538473	PF, 0.047µF
C635	24538123	PF, 0.012µF
C636	24530104	PF, 0.1µF, ±10%, 63V
C637	24530104	PF, 0.1µF, ±10%, 63V
C638	24530104	PF, 0.1µF, ±10%, 63V
C640	24633100	EL, 10µF, 16V
C641	24538224	PF, 0.22µF
C642	24636479	EL, 4.7µF, 50V
C643	24633101	EL, 100µF, 16V
C644	24530104	PF, 0.1µF, ±10%, 63V
C645	24794222	EL, 2200µF, 16V
C646	24636479	EL, 4.7µF, 50V
C647	24794222	EL, 2200µF, 16V
C648	24530104	PF, 0.1µF, ±10%, 63V
C649	24634102	EL, 1000µF, 25V
C650	24634102	EL, 1000µF, 25V
C651	24634332	EL, 3300µF, 25V
C652	24634332	EL, 3300µF, 25V
C653	24633100	EL, 10µF, 16V
C654	24635100	EL, 10µF, 35V
C655	24530104	PF, 0.1µF, ±10%, 63V
C656	24633221	EL, 220µF, 16V
C661	24085034	EL, 2.2µF, 25V, NP
C662	24085034	EL, 2.2µF, 25V, NP
C670	24636010	EL, 1µF, 50V
C671	24646010	EL, 1µF, 50V
⚠ C801	24098999	PF, 0.1µF, ±20%, AC250V
⚠ C802	24098999	PF, 0.1µF, ±20%, AC250V
C803	24094906	CD, 4700pF, +80%, -20%, AC250V
C804	24094906	CD, 4700pF, +80%, -20%, AC250V
C805	24094906	CD, 4700pF, +80%, -20%, AC250V
C806	24094906	CD, 4700pF, +80%, -20%, AC250V
C807	24086977	EL, 240µF, 400V

Location No.	Part No.	Description
C808	24636339	EL, 3.3µF, 50V
C809	24636229	EL, 2.2µF, 50V
C810	24212152	CD, 1500pF, ±10%, 50V
C811	24598562	PF, 5600pF
C812	24591102	PF, 1000pF
C815	24436151	CD, 150pF
C816	24794331	EL, 330µF, 16V
C817	24633470	EL, 47µF, 16V
C818	24820822	PF, 8200pF, 630V
C821	24636010	EL, 1µF, 50V
C823	24530182	PF, 1800pF, ±10%, 63V
C824	24212181	CD, 180pF, ±10%
C825	24530103	PF, 0.01µF, ±10%, 63V
C826	24530392	PF, 3900pF, ±10%, 63V
⚠C880	24094841	CD, 220pF, AC400V
⚠C881	24094838	CD, 2200pF, ±20%, AC400V
⚠C882	24094838	CD, 2200pF, ±20%, AC400V
⚠C883	24215102	CD, 1000pF, ±10%, 1kV
C888	24442101	CD, 100pF, ±10%, 2kV
C901	24644010	EL, 1µF, 250V
C902	24095512	PF, 4700pF, 1600V
C903	24644010	EL, 1µF, 250V
CA01	24636010	EL, 1µF, 50V
CA02	24232103	CD, 0.01µF, +80%, -20%
CA11	24436101	CD, 100pF
CA12	24436101	CD, 100pF
CA13	24232103	CD, 0.01µF, +80%, -20%
CA14	24633470	EL, 47µF, 16V
CA15	24212102	CD, 1000pF, ±10%
CA16	24436221	CD, 220pF
CA17	24538104	PF, 0.1µF
CA18	24538104	PF, 0.1µF
CA20	24591103	PF, 0.01µF
CA21	24212681	CD, 680pF, ±10%
CA22	24212152	CD, 1500pF, ±10%
CA23	24212102	CD, 1000pF, ±10%
CA24	24212391	CD, 390pF, ±10%
CA25	24633100	EL, 10µF, 16V
CA26	24636010	EL, 1µF, 50V
CA27	24232103	CD, 0.01µF, +80%, -20%
CA28	24232103	CD, 0.01µF, +80%, -20%
CA29	24232103	CD, 0.01µF, +80%, -20%
CB02	24636229	EL, 2.2µF, 50V
CB03	24538104	PF, 0.1µF
CB04	24436390	CD, 39pF
CB05	24353180	CD, 18pF
CB06	24212102	CD, 1000pF, ±10%
CB07	24232103	CD, 0.01µF, +80%, -20%
CB08	24212102	CD, 1000pF, ±10%
CB09	24633470	EL, 47µF, 16V
CB10	24212102	CD, 1000pF, ±10%
CB11	24232103	CD, 0.01µF, +80%, -20%
CC01	24212681	CD, 680pF, ±10%
CC02	24212102	CD, 1000pF, ±10%

Location No.	Part No.	Description
CC03	24636010	EL, 1µF, 50V
CC04	24636010	EL, 1µF, 50V
CE02	24633471	EL, 470µF, 16V
CE03	24633221	EL, 220µF, 16V
CE04	24633100	EL, 10µF, 16V
CE05	24636339	EL, 3.3µF, 50V
CE08	24633100	EL, 10µF, 16V
CE09	24538474	PF, 0.47µF
CE10	24538474	PF, 0.47µF
CE12	24538474	PF, 0.47µF
CE13	24636010	EL, 1µF, 50V
CE14	24636478	EL, 0.47µF, 50V
CE15	24633100	EL, 10µF, 16V
CE16	24538224	PF, 0.22µF
CE17	24636010	EL, 1µF, 50V
CE18	24636010	EL, 1µF, 50V
CE19	24633100	EL, 10µF, 16V
CF01	24636229	EL, 2.2µF, 50V
CF02	24538104	PF, 0.1µF
CF03	24636010	EL, 1µF, 50V
CF04	24636010	EL, 1µF, 50V
CF05	24636010	EL, 1µF, 50V
CF06	24436271	CD, 270pF
CF07	24436271	CD, 270pF
CF08	24436271	CD, 270pF
CF10	24232103	CD, 0.01µF, +80%, -20%
CF11	24636010	EL, 1µF, 50V
CF13	24636221	EL, 220µF, 50V
CF14	24232103	CD, 0.01µF, +80%, -20%
CK01	24598222	PF, 2200pF
CK02	24538683	PF, 0.068µF
CK03	24633100	EL, 10µF, 16V
CK04	24633330	EL, 33µF, 16V
CK05	24633100	EL, 10µF, 16V
CK06	24633100	EL, 10µF, 16V
CK07	24692222	PF, 2200pF
CR41	24636339	EL, 3.3µF, 50V
CR42	24232103	CD, 0.01µF, +80%, -20%
CR61	24636100	EL, 10µF, 50V
CR62	24232103	CD, 0.01µF, +80%, -20%
CR71	24636339	EL, 3.3µF, 50V
CR72	24232103	CD, 0.01µF, +80%, -20%
CS01	24635471	EL, 470µF, 35V
CS02	24634102	EL, 100µF, 25V
CS03	24635100	EL, 10µF, 35V
CS04	24635100	EL, 10µF, 35V
CS07	24633470	EL, 47µF, 16V

RESISTORS

R01	24899104	CF, 100k ohm
R04	24899102	CF, 1k ohm
R05	24899682	CF, 6800 ohm
R06	24899682	CF, 6800 ohm
R07	24899681	CF, 680 ohm

Location No.	Part No.	Description
R08	24899152	CF, 1500 ohm
R11	24899122	CF, 1200 ohm
R12	24899122	CF, 1200 ohm
R13	24899122	CF, 1200 ohm
R19	24890682	CF, 6800 ohm, 1/4W
R26	24899102	CF, 1k ohm
R28	24899471	CF, 470 ohm
R29	24899471	CF, 470 ohm
R30	24899471	CF, 470 ohm
R32	24899683	CF, 68k ohm
R35	24899223	CF, 22k ohm
R36	24899223	CF, 22k ohm
R37	24890332	CF, 3300 ohm, 1/4W
R101	24890102	CF, 1k ohm, 1/4W
R104	24899683	CF, 68k ohm
R105	24899221	CF, 220 ohm
R107	24899824	CF, 820k ohm
R108	24890392	CF, 3900 ohm, 1/4W
R109	24899204	CF, 200k ohm, 1/4W
R151	24061669	VR, 5k ohm, 1/8W
R152	24061662	VR, 1M ohm, 1/8W
R161	24899181	CF, 180 ohm
R162	24899102	CF, 1k ohm
R163	24899562	CF, 5600 ohm
R164	24899221	CF, 220 ohm
R165	24899681	CF, 680 ohm
R166	24899270	CF, 27 ohm
R171	24890122	CF, 1200 ohm, 1/4W
R172	24899122	CF, 1200 ohm
R201	24890221	CF, 220 ohm
R202	24899152	CF, 1500 ohm
R203	24890162	CF, 1600 ohm, 1/4W
R204	24899821	CF, 820 ohm
R207	24899391	CF, 390 ohm
R209	24899473	CF, 47k ohm
R210	24899162	CF, 1600 ohm
R211	24890824	CF, 820k ohm, 1/4W
R212	24890103	CF, 10k ohm, 1/4W
R213	24899183	CF, 18k ohm
R214	24899162	CF, 1600 ohm
R215	24890822	CF, 8200 ohm, 1/4W
R218	24899101	CF, 100 ohm
R221	24890152	CF, 1500 ohm, 1/4W
R230	24890102	CF, 1k ohm, 1/4W
R231	24899101	CF, 100 ohm
R232	24890101	CF, 100 ohm, 1/4W
R240	24899273	CF, 27k ohm
R241	24890913	CF, 91k ohm, 1/4W
R242	24899474	CF, 470k ohm
R243	24890823	CF, 82k ohm, 1/4W
R252	24061613	VR, 200 ohm, 1/10W
R253	24061613	VR, 200 ohm, 1/10W
R255	24061610	VR, 2k ohm, 1/10W
R256	24060480	VR, 10k ohm, 0.15W
R257	24063937	VR, 500 ohm, 0.15W
R265	24890910	CF, 91 ohm, 1/4W
R301	24899511	CF, 510 ohm
R302	24899564	CF, 560k ohm
R303	24890564	CF, 560k ohm, 1/4W

Location No.	Part No.	Description
R304	24899103	CF, 10k ohm
R306	24899751	CF, 750 ohm
R307	24899563	CF, 56k ohm
R308	24899393	CF, 39k ohm
R309	24899244	CF, 240k ohm
R310	24946825	CC, 8.2M ohm, ±10%, 1/2W
R311	24899163	CF, 16k ohm
R315	24899163	CF, 16k ohm
R316	24899304	CF, 300k ohm
⚠R317	24552511	OMF, 510 ohm, 1/2W
R319	24890202	CF, 2k ohm, 1/4W
R320	24899102	CF, 1k ohm
⚠R321	24552132	OMF, 1300 ohm, 1/2W
⚠R322	24383621	OMF, 620 ohm, 2W
⚠R323	24983159	OMF, 1.5 ohm, 1W
R324	24890153	CF, 15k ohm, 1/4W
⚠R325	24552222	OMF, 2200 ohm, 1/2W
R327	24532100	FR, 10 ohm, 1W
R328	24890222	CF, 2200 ohm, 1/2W
⚠R329	24553152	OMF, 1500 ohm, 1W
R330	24899433	CF, 43k ohm
⚠R331	24552102	OMF, 1k ohm, 1/2W
⚠R332	24552102	OMF, 1k ohm, 1/2W
R333	24899331	CF, 330 ohm
R351	24061664	VR, 200k ohm, 1/8W
R352	24061606	VR, 50k ohm, 1/10W
R356	24061657	VR, 5k ohm, 1/8W
R362	24890221	CF, 220 ohm, 1/4W
R363	24890103	CF, 10k ohm, 1/4W
R364	24890563	CF, 56k ohm, 1/4W
R365	24890124	CF, 120k ohm, 1/4W
R366	24890224	CF, 220k ohm, 14W
R367	24890103	CF, 10k ohm, 1/4W
R368	24890102	CF, 1k ohm, 1/4W
R369	24890152	CF, 1500 ohm, 1/4W
R370	24890473	CF, 47k ohm, 1/4W
R371	24890104	CF, 100k ohm, 1/4W
R372	24890104	CF, 100k ohm, 1/4W
R373	24890332	CF, 3300 ohm, 1/4W
R374	24890152	CF, 1500 ohm, 1/4W
R375	24890562	CF, 5600 ohm, 1/4W
R376	24890103	CF, 10k ohm, 1/4W
R377	24890153	CF, 15k ohm, 1/4W
R379	24890622	CF, 6200 ohm, 1/4W
R381	24899302	CF, 3k ohm
R382	24899103	CF, 10k ohm
R383	24899133	CF, 13k ohm
R384	24899302	CF, 3k ohm
R385	24899512	CF, 5100 ohm
⚠R391	24553101	OMF, 100 ohm, 1W
R401	24899161	CF, 160 ohm
R402	24890273	CF, 27k ohm, 1/4W
R403	24899362	CF, 3600 ohm
R404	24890222	CF, 2200 ohm, 1/4W
R405	24899363	CF, 36k ohm
R406	24009990	CF, 150k ohm, ±2%, 1/4W
⚠R407	24553121	OMF, 120 ohm, 1/2W
R408	24899182	CF, 1800 ohm
⚠R410	24000947	OMF, 15k ohm, ±2%, 1/2W

Location No.	Part No.	Description
R411	24890330	CF, 33 ohm, 1/4W
⚠R416	24007696	Cement, 2k ohm, 5.5W
R417	24946272	CC, 2700 ohm, ±10%, 1/2W
R428	24946560	CC, 56 ohm, ±10%, 1/2W
⚠R440	24552103	OMF, 10k ohm, 1/2W
⚠R441	24552103	OMF, 10k ohm, 1/2W
⚠R448	24000958	FR, 3 ohm, 2W
R451	24061668	VR, 10k ohm, 1/8W
⚠R461	24553102	OMF, 1k ohm, 1W
⚠R481	24983249	OMF, 2.4 ohm, 1W
⚠R482	24383301	OMF, 300 ohm, 2W
R501	24899821	CF, 820 ohm
R502	24890242	CF, 2400 ohm, 1/4W
R504	24899334	CF, 330k ohm
R505	24890103	CF, 10k ohm, 1/4W
R506	24899162	CF, 1600 ohm
R509	24899561	CF, 560 ohm
R510	24899471	CF, 470 ohm
R511	24899153	CF, 15k ohm
R512	24899104	CF, 100k ohm
R514	24899511	CF, 510 ohm
R515	24899821	CF, 820 ohm
R517	24899823	CF, 82k ohm
R518	24899273	CF, 27k ohm
R519	24899273	CF, 27k ohm
R520	24899122	CF, 1200 ohm
R522	24899272	CF, 2700 ohm
R524	24890272	CF, 2700 ohm, 1/4W
R526	24899272	CF, 2700 ohm
R528	24899101	CF, 110 ohm
R529	24899101	CF, 110 ohm
R530	24899101	CF, 110 ohm
⚠R533	24553433	OMF, 4.3 ohm, 1W
⚠R534	24553433	OMF, 4.3 ohm, 1W
⚠R535	24553433	OMF, 4.3 ohm, 1W
R540	24890181	CF, 180 ohm, 1/4W
R541	24890151	CF, 150 ohm, 1/4W
R542	24890151	CF, 150 ohm, 1/4W
R543	24890221	CF, 220 ohm
R544	24890221	CF, 220 ohm
R545	24890221	CF, 220 ohm
R551	24061671	VR, 1k ohm, 1/8W
R552	24061669	VR, 5k ohm, 1/8W
R555	24060480	VR, 10k ohm, 0.15W
R557	24061608	VR, 5k ohm, 1/10W
R558	24061608	VR, 5k ohm, 1/10W
R559	24061608	VR, 5k ohm, 1/10W
R561	24890472	CF, 4700 ohm, 1/4W
⚠R591	24009974	OMF, 15k ohm, 2W
⚠R592	24009974	OMF, 15k ohm, 2W
⚠R593	24009974	OMF, 15k ohm, 2W
R601	24899471	CF, 470 ohm
R602	24899222	CF, 2200 ohm
R603	24899133	CF, 13k ohm
R604	24899104	CF, 100k ohm
R605	24899302	CF, 3k ohm
R611	24899332	CF, 3300 ohm
R612	24899471	CF, 470 ohm

Location No.	Part No.	Description
R614	24899102	CF, 1k ohm
R616	24899102	CF, 1k ohm
R631	24890103	CF, 10k ohm, 1/4W
R632	24890103	CF, 10k ohm, 1/4W
R633	24890103	CF, 10k ohm, 1/4W
R634	24890103	CF, 10k ohm, 1/4W
R635	24890102	CF, 1k ohm, 1/4W
R636	24890392	CF, 3900 ohm, 1/4W
R637	24890104	CF, 100k ohm, 1/4W
⚠R638	24982479	OMF, 4.7 ohm, 1/2W
R639	24890102	CF, 1k ohm, 1/4W
R640	24890104	CF, 100k ohm, 1/4W
R641	24890392	CF, 3900 ohm, 1/4W
⚠R642	24892479	OMF, 470 ohm, 1/2W
R643	24890105	CF, 1M ohm, 1/4W
R644	24890562	CF, 5600 ohm, 1/4W
R645	24890222	CF, 2200 ohm, 1/4W
R646	24890154	CF, 150k ohm, 1/4W
R647	24890222	CF, 2200 ohm, 1/4W
R647	24890472	CF, 4700 ohm, 1/4W
R648	24890472	CF, 4700 ohm, 1/4W
R649	24890272	CF, 2700 ohm, 1/4W
R651	24060478	VR, 50k ohm, 1/10W
R652	24060480	VR, 10k ohm, 0.15W
R653	24060420	VR, 10k ohm, 0.15W, Center Click
R654	24060420	VR, 10k ohm, 0.15W, Center Click
R661	24946101	CC, 100 ohm, ±10%, 1/2W
R662	24946101	CC, 100 ohm, ±10%, 1/2W
R679	24890103	CF, 10k ohm
R680	24890472	CF, 4700 ohm, 1/4W
R681	24890472	CF, 4700 ohm, 1/4W
R691	24890222	CF, 2200 ohm, 1/4W
R692	24890222	CF, 2200 ohm, 1/4W
R693	24890102	CF, 1k ohm, 1/4W
⚠R801	24007735	Cement, 6.8 ohm, 15W
⚠R802	24000938	FR, 0.47 ohm, ±10%, 2W
⚠R803	24007698	Cement, 6200 ohm, 7W
⚠R804	24383104	OMF, 100k ohm, 2W
R807	24899912	CF, 9100 ohm
R808	24890242	CF, 2400 ohm, 1/4W
R809	24890431	CF, 430 ohm, 1/4W
R810	24899103	CF, 10k ohm
R811	24890244	CF, 240k ohm, 1/4W
R812	24899684	CF, 680k ohm
R813	24890684	CF, 680k ohm, 1/4W
R814	24899103	CF, 10k ohm
⚠R815	24327163	MF, 16k ohm, ±1%, 1/4W
R816	24899162	CF, 1600 ohm
⚠R818	24552100	MF, 10 ohm, 1/2W
⚠R819	24552511	OMF, 510 ohm, 1/2W
R820	24890270	CF, 27 ohm, 1/4W
R821	24899104	CF, 100k ohm
⚠R822	24552150	OMF, 15 ohm, 1/2W
R823	24890270	CF, 27 ohm, 1/4W
R825	24899152	CF, 1500 ohm
⚠R828	24982339	MF, 3.3 ohm, 1/2W
⚠R829	24553820	OMF, 82 ohm, 1W
⚠R830	24552820	OMF, 82 ohm, 1/2W

Location No.	Part No.	Description
⚠R836	24383563	OMF, 56k ohm, 2W
⚠R840	24546519	FR, 5.1 ohm, 1/2W
⚠R851	24061787	VR, 500 ohm, 0.3W
R852	24061784	VR, 5k ohm, 0.3W
⚠R890	24000918	PTC Thermistor, 18 ohm, ±20%, 290V
R901	24946152	CC, 1500 ohm, ±10%, 1/2W
R902	24946152	CC, 1500 ohm, ±10%, 1/2W
R903	24946152	CC, 1500 ohm, ±10%, 1/2W
R920	24000960	FR, 2.7 ohm, 2W
R990	24946125	CC, 1.2M ohm, 1/2W
⚠RA05	24383133	OMF, 13k ohm, 2W
RA11	24899102	CF, 1k ohm
RA12	24899223	CF, 22k ohm
RA13	24899223	CF, 22k ohm
RA14	24890273	CF, 22k ohm
RA15	24899272	CF, 2700 ohm
RA16	24899153	CF, 15k ohm
RA17	24899153	CF, 15k ohm
RA18	24899153	CF, 15k ohm
RA19	24899153	CF, 15k ohm
RA20	24890153	CF, 15k ohm, 1/4W
RA21	24899391	CF, 390 ohm
RA22	24899391	CF, 390 ohm
RA23	24899391	CF, 390 ohm
RA24	24899391	CF, 390 ohm
RA25	24899391	CF, 390 ohm
RA26	24899391	CF, 390 ohm
RA27	24899391	CF, 390 ohm
RA28	24899102	CF, 1k ohm
RA29	24899102	CF, 1k ohm
RA30	24899102	CF, 1k ohm
RA31	24899102	CF, 1k ohm
RA33	24890102	CF, 1k ohm, 1/4W
RA34	24890104	CF, 100k ohm, 1/4W
RA35	24899103	CF, 10k ohm
RA36	24899472	CF, 4700 ohm
RA37	24899103	CF, 10k ohm
RA38	24899203	CF, 20k ohm
RA39	24899333	CF, 33k ohm
RA40	24899333	CF, 33k ohm
RA41	24899333	CF, 33k ohm
RA42	24890153	CF, 15k ohm, 1/4W
RA43	24899471	CF, 470 ohm
RA44	24899104	CF, 100k ohm
RA45	24899471	CF, 470 ohm
RA46	24899471	CF, 470 ohm
RA47	24890471	CF, 470 ohm, 1/4W
RA48	24899391	CF, 390 ohm
RA49	24890102	CF, 1k ohm, 1/4W
RA60	24890102	CF, 1k ohm, 1/4W
RA61	24890222	CF, 2200 ohm, 1/4W
RA62	24890222	CF, 2200 ohm, 1/4W
RA63	24890564	CF, 560k ohm, 1/4W
RA64	24899472	CF, 4700 ohm
RA65	24899562	CF, 5600 ohm
RA66	24899103	CF, 10k ohm

Location No.	Part No.	Description
RA69	24899103	CF, 10k ohm
RA71	24899224	CF, 220k ohm
RA72	24899224	CF, 220k ohm
RA74	24899224	CF, 220k ohm
RA75	24899224	CF, 220k ohm
RA76	24899434	CF, 430k ohm
RA77	24899103	CF, 10k ohm
RA79	24899243	CF, 24k ohm
RA80	24899753	CF, 75k ohm
RA81	24899105	CF, 1M ohm
RA82	24899563	CF, 56k ohm
RA83	24899563	CF, 56k ohm
RA84	24899105	CF, 1M ohm
RA85	24899562	CF, 5600 ohm
RA87	24890183	CF, 18k ohm, 1/4W
RA88	24890222	CF, 2200 ohm, 1/4W
RA91	24890391	CF, 390 ohm, 1/4W
RA92	24890391	CF, 390 ohm, 1/4W
RB02	24899471	CF, 470 ohm
RB04	24899471	CF, 470 ohm
RB05	24899272	CF, 2700 ohm
⚠RB06	24552560	OMF, 56 ohm, 1/2W
RB07	24899150	CF, 15 ohm
RB08	24899331	CF, 330 ohm
RC01	24899104	CF, 100k ohm, 1/4W
RC02	24899273	CF, 27k ohm, 1/4W
RC03	24899473	CF, 47k ohm, 1/4W
RC04	24899472	CF, 4700 ohm, 1/4W
RC05	24899562	CF, 5600 ohm, 1/4W
RC06	24899301	CF, 300 ohm, 1/4W
RC07	24899152	CF, 1500 ohm, 1/4W
RC08	24899103	CF, 10k ohm, 1/4W
RC09	24899510	CF, 51k ohm, 1/4W
RC10	24899103	CF, 10k ohm, 1/4W
RC11	24899104	CF, 100k ohm, 1/4W
RC12	24899273	CF, 27k ohm, 1/4W
RE01	24890101	CF, 100 ohm, 1/4W
RE02	24890472	CF, 4700 ohm, 1/4W
⚠RE05	24552391	OMF, 390 ohm, 1/2W
RE07	24890750	CF, 75 ohm, 1/4W
RE09	24890391	CF, 390 ohm, 1/4W
RE10	24890102	CF, 1k ohm, 1/4W
RE11	24890112	CF, 1100 ohm, 1/4W
RE12	24890123	CF, 12k ohm, 1/4W
RE13	24890433	CF, 43k ohm, 1/4W
RE14	24890332	CF, 3300 ohm, 1/4W
RE15	24890104	CF, 100k ohm, 1/4W
RE17	24890104	CF, 100k ohm, 1/4W
RE18	24890101	CF, 100 ohm, 1/4W
RE19	24890104	CF, 100k ohm, 1/4W
RE20	24890103	CF, 10k ohm, 1/4W
RE21	24890562	CF, 5600 ohm, 1/4W
RE22	24890183	CF, 18k ohm, 1/4W
RE23	24890101	CF, 100 ohm, 1/4W

Location No.	Part No.	Description
RE25	24890562	CF, 5600 ohm, 1/4W
RE26	24890562	CF, 5600 ohm, 1/4W
RE27	24890683	CF, 68k ohm, 1/4W
RE28	24890224	CF, 220k ohm, 1/4W
RE29	24890224	CF, 220k ohm, 1/4W
RE30	24890753	CF, 75k ohm, 1/4W
RE31	24890682	CF, 6800 ohm, 1/4W
RE32	24890224	CF, 220k ohm, 1/4W
RE34	24890682	CF, 6800 ohm, 1/4W
RE35	24890222	CF, 2200 ohm, 1/4W
RE36	24890823	CF, 82k ohm, 1/4W
RE37	24890104	CF, 100k ohm, 1/4W
RE38	24890393	CF, 39k ohm, 1/4W
RE39	24890202	CF, 2k ohm, 1/4W
RE40	24890123	CF, 12k ohm, 1/4W
RE41	24890133	CF, 13k ohm, 1/4W
RE42	24890472	CF, 4700 ohm, 1/4W
RE45	24890682	CF, 6800 ohm, 1/4W
RE46	24890683	CF, 68k ohm, 1/4W
RE47	24890431	CF, 430 ohm, 1/4W
RE56	24061608	VR, 10k ohm, 1/10W
RE57	24061608	VR, 10k ohm, 1/10W
RF01	24899392	CF, 3900 ohm
RF02	24899682	CF, 6800 ohm
RF03	24899272	CF, 2700 ohm
RF04	24899272	CF, 2700 ohm
RF05	24899272	CF, 2700 ohm
RF07	24899272	CF, 2700 ohm
RF08	24899272	CF, 2700 ohm
RF12	24899222	CF, 2200 ohm
RF13	24899222	CF, 2200 ohm
RF14	24899222	CF, 2200 ohm
RF16	24899182	CF, 1800 ohm
RF17	24899182	CF, 1800 ohm
RF18	24899182	CF, 1800 ohm
RF20	24890121	CF, 120 ohm, 1/4W
RF21	24890121	CF, 120 ohm, 1/4W
RF22	24890121	CF, 120 ohm, 1/4W
RF23	23890103	CF, 10k ohm, 1/4W
RF24	24899221	CF, 220 ohm
RF25	24899271	CF, 270 ohm
RF26	24899271	CF, 270 ohm
RF27	24899271	CF, 270 ohm
⚠RF28	24552241	OMF, 240 ohm, 1/2W
RF29	24899562	CF, 5600 ohm
RF30	24899222	CF, 2200 ohm
RF31	24899222	CF, 2200 ohm
RF32	24890103	CF, 10k ohm, 1/4W
RF33	24890103	CF, 10k ohm, 1/4W
RF34	24890103	CF, 10k ohm, 1/4W
RF37	24899272	CF, 2700 ohm
RF38	24899103	CF, 10k ohm
RF39	24899562	CF, 5600 ohm
RF40	24899221	CF, 220 ohm
RF41	24890101	CF, 100 ohm, 1/4W
⚠RF42	24552820	OMF, 82 ohm, 1/2W
RF43	24899822	CF, 8200 ohm

Location No.	Part No.	Description
RF44	24899432	CF, 4300 ohm
RF55	24061608	VR, 10k ohm, 1/10W
RG83	24890431	CF, 430 ohm, 1/4W
RK01	24899223	CF, 22k ohm
RK02	24899103	CF, 10k ohm
RK03	24899220	CF, 22 ohm
RK04	24899222	CF, 2200 ohm
RR43	24899123	CF, 12k ohm
RR44	24899473	CF, 47k ohm
RR45	24899472	CF, 4700 ohm
RR46	24899563	CF, 56k ohm
RR64	24899122	CF, 1200 ohm
RR65	24899104	CF, 100k ohm
RR73	24899123	CF, 12k ohm
RR74	24899473	CF, 47k ohm
RR75	24899472	CF, 4700 ohm
RR76	24899272	CF, 2700 ohm, 1/4W
⚠RS01	24552751	OMF, 750 ohm, 1/2W
RS02	24890182	CF, 1800 ohm, 1/4W
⚠RS05	24983828	MF, 0.82 ohm, 1W
⚠RS06	24983478	OMF, 0.47 ohm, 1W
RS07	24899102	CF, 1k ohm

COILS & TRANSFORMERS

L02	23262826	Coil, IF, TRF1067
L03	23238920	Coil, Peaking, TRF4150AC
L102	23262855	Coil, PIF, TRF1453
L103	23262811	Coil, AFT, TRF1445
L105	23237990	Coil, Peaking,TRF4569AC
L106	23261051	Coil, RF Choke, AZ9246E
L161	23262951	Coil, RF Choke, TRF1019
L162	23261985	Coil, RF Choke, TRF9221
L171	23262881	Coil, AFT, TRF1445
L201	23237987	Coil, Peaking, TRF4100AC
L361	23221966	Coil, DPC, TLN3012
L362	23221967	Coil, DPC, TLN3011
L410	23221026	Coil, RF Choke, AZ9004Y
L424	23222698	Coil, Horiz. Linearity, TLN2016C
L426	23261974	Coil (Ferrite Bead), HC5-035
L501	23237981	Coil, Peaking, TRF4330AC
L502	23237987	Coil, Peaking, TRF4100AC
L503	23237911	Coil, Peaking, TRF4201AC
L504	23237991	Coil, Peaking, TRF4479AC
L551	23250972	Coil, 1H-Delay Matching, TRF5418
L552	23250972	Coil, 1H-Delay Matching, TRF5418
L601	23237986	Coil, Peaking, TRF4120AC
L602	23252198	Coil, SIF, TRF6702G
⚠L901	23209999	Coil, Degaussing, Type 94350
⚠L902	23209999	Coil, Degaussing, Type 94350
LA11	23237999	Coil, Peaking, TRF4109AC
LB01	23262842	Coil, PIF, Post Tuner, Amp
LK01	23232963	Coil, Variable, TRF3055

Location No.	Part No.	Description
LK02	23232963	Coil, Variable, TRF3055
⚠T401	23224997	Transformer, Horiz. Drive, TLN1027
T801	23211967	Transformer, Line Filter, TRF3113
⚠T802	23226417	Transformer, Power/Line Output, TFB4028AD
⚠T803	23213808	Transformer, Power Trans, TPW1282
⚠T804	23213842	Transformer, Power Audio, TPW1260
SEMICONDUCTORS		
IC01	23119519	IC, SAA5020
IC02	23119518	IC, SAA5030
IC03	23119517	IC, SAA5040B
IC04	23119516	IC, SAA5050
IC06	23119515	IC, N74LS83AN
IC07	23119514	IC, N74LS161N
IC08	23119514	IC, N74LS161N
IC09	23119482	IC, TMS2114/L NL
IC09	or B0428612	TMM2114AP-12
IC10	23119482	IC, TMS2114/L NL
IC10	or B0428615	TMM2114AP-15
IC11	23119513	IC, N74LS02N
IC12	B0470116	IC, TC4011BP
IC101	B0356804	IC, TA7680AP
IC303	23119533	IC, TDA3651A
IC501	B0357040	IC, TA7699P
IC630	23119458	IC, TDA1524A
IC631	23119520	IC, TDA1515
IC801	B0320425	IC, TA7265AP
ICA11	23119522	IC, TMP47C432N-8867 (Only for the TV with UC01 Sound Mute Board.)
ICA11	23119449	IC, TMP47C432N-8884 (For the TV which UC01 Sound Mute Board is not mounted in.)
ICA12	B0428420	IC, TMM842P
ICA13	B0349250	IC, TA75393S
ICE01	B0470532	IC, TC4053BP
ICE06	B0470532	IC, TC4053BP
ICF01	23119723	IC, A5352
ICK01	23119566	IC, μPC1474HA
Q13	A6317547	Transistor, 2SC1815-Y
Q161	23114690	Transistor, BF199
Q201	23114689	Transistor, BC547A
Q302	23114691	Transistor, BC547A
Q362	23114689	Transistor, BC547A
Q363	23114691	Transistor, BC557A
Q364	A6841770	Transistor, 2SD526-Y
Q371	23114632	Transistor, BC547B
Q372	23114632	Transistor, BC547B

Location No.	Part No.	Description
Q402	A6319403	Transistor, 2SC2068 FA-1
⚠Q404	A6868953	Transistor, 2SD1432F
Q505	23114693	Transistor, BF871
Q506	A6330000	Transistor, 2SC2482
Q507	23114693	Transistor, BF871
Q508	A6330000	Transistor, 2SC2482
Q509	23114693	Transistor, BF871
Q510	A6330000	Transistor, 2SC2482
Q511	A6547300	Transistor, 2SA1321
Q512	A6547300	Transistor, 2SA1321
Q513	A6547300	Transistor, 2SA1321
Q611	23114691	Transistor, BC557A
Q636	23114689	Transistor, BC547A
⚠Q804	A6868952	Transistor, 2SD1432 FA-1
Q805	A6331600	Transistor, 2SC2552
Q806	23114632	Transistor, BC547B
QA14	23114691	Transistor, BC557A
QA15	23114691	Transistor, BC557A
QA16	23114689	Transistor, BC547A
QA18	A6048371	Transistor, 2SK30ATM-GR
QA19	23114689	Transistor, BC547A
QB01	23114687	Transistor, BF324
QC01	23114689	Transistor, BC547A
QC02	23114689	Transistor, BC547A
QC03	23114691	Transistor, BC557A
QC04	23114689	Transistor, BC547A
QE02	23114691	Transistor, BC557A
QE03	23114691	Transistor, BC557A
QE04	23114689	Transistor, BC547A
QE05	23114689	Transistor, BC547A
QE07	23114689	Transistor, BC547A
QE08	23114689	Transistor, BC547A
QE09	23114689	Transistor, BC547A
QE10	23114689	Transistor, BC547A
QE11	23114689	Transistor, BC547A
QE12	23114689	Transistor, BC547A
QF02	23114691	Transistor, BC557A
QF03	23114691	Transistor, BC557A
QF04	23114691	Transistor, BC557A
QF05	23114689	Transistor, BC547A
QF06	23114689	Transistor, BC547A
QF07	23114688	Transistor, BC327
QF08	23114689	Transistor, BC547A
QR41	23114689	Transistor, BC547A
QR42	23114691	Transistor, BC557A
QR62	23114546	Transistor, BC557B
QR71	23114689	Transistor, BC547A
QR72	23114691	Transistor, BC557A
QS01	23114674	Transistor, BDT31A
QS02	A6625170	Transistor, 2SB686-0
QS03	23114689	Transistor, BC547A
QS04	23114691	Transistor, BC557A
D01	23115599	Diode, 1N4148

Location No.	Part No.	Description
D02	23115599	Diode, 1N4148
D03	23115599	Diode, 1N4148
D04	23115599	Diode, 1N4148
D202	23115599	Diode, 1N4148
D203	23115599	Diode, 1N4148
D204	23115599	Diode, 1N4148
D205	23115599	Diode, 1N4148
D241	23115599	Diode, 1N4148
D242	23115599	Diode, 1N4148
D243	A7150041	Diode, 1SS104
D244	23115599	Diode, 1N4148
D301	23115599	Diode, 1N4148
D302	23115596	Diode, BYV95C
D305	23115596	Diode, BYV95C
D309	23115598	Diode, 1N4003
D361	23118994	Diode, BYW95C
D362	23115599	Diode, 1N4148
D371	23118858	Diode, Zener, BZX79B5V6
D406	23115596	Diode, BYV95C
D408	A7568300	Diode, 1S1835
D413	A7580665	Diode, 3JH61 FA-1
D414	23118995	Diode, BY228
D591	23115599	Diode, 1N4148
D592	23115599	Diode, 1N4148
D593	23115599	Diode, 1N4148
D630	23977993	Bridge Rectifier, BY225-200
D632	23115599	Diode, 1N4148
D801	A7468410	Diode, TVR-4J
D802	A7568410	Diode, TVR-4J
D803	A7568410	Diode, TVR-4J
D804	A7568410	Diode, TVR-4J
D805	23115599	Diode, 1N4148
D806	A7110311	Diode, Zener, 05Z10X
D807	23115599	Diode, 1N4148
D808	23115596	Diode, BYV95C
D809	23118972	Diode, GU-1C
D810	23115596	Diode, BYV95C
D811	23115599	Diode, 1N4148
D812	23115596	Diode, BYV95C
D816	23118972	Diode, GU-1C
D821	23115599	Diode, 1N4148
D822	23115605	Diode, Zener, ZPD5.6
D823	23115582	Diode, Zener, ZPD4.7
DA05	23115878	Diode, Zener, μPC574JC
DA06	23115599	Diode, 1N4148
DA11	23115599	Diode, 1N4148
DA12	23115599	Diode, 1N4148
DA13	23115599	Diode, 1N4148
DA14	23115599	Diode, 1N4148
DA15	23115599	Diode, 1N4148
DA16	23115599	Diode, 1N4148
DA17	23115599	Diode, 1N4148
DA18	23115599	Diode, 1N4148

Location No.	Part No.	Description
DA19	23115599	Diode, 1N4148
DA91	23118971	Display (LED), MAN6410, Green
DE01	23115599	Diode, 1N4148
DE02	23115599	Diode, 1N4148
DE03	23115599	Diode, 1N4148
DE04	23115599	Diode, 1N4148
DE05	23115599	Diode, 1N4148
DE06	23115599	Diode, 1N4148
DE07	23115599	Diode, 1N4148
DE08	23115599	Diode, 1N4148
DF01	23115599	Diode, 1N4148
DF02	23115599	Diode, 1N4148
DF03	23115599	Diode, 1N4148
DF04	23115599	Diode, 1N4148
DF05	23115535	Diode, OA91
DF06	23115599	Diode, 1N4148
DG13	23118968	Diode (LED), MV54124, Green
DK01	23115594	Diode, SFH205
⚠ DR10	23115592	Photo Couple, CNY65
DR41	23115599	Diode, 1N4148
DR71	23115599	Diode, 1N4148
DR90	23118969	Diode (LED), MV57124, Red
DS01	23115593	Diode, 1N4002
DS02	23115593	Diode, 1N4002
DS03	23115593	Diode, 1N4002
DS04	23115593	Diode, 1N4002
DS05	23115593	Diode, 1N4002
DS06	23115593	Diode, 1N4002
DS07	23115593	Diode, 1N4002
DS08	23115593	Diode, 1N4002
DS09	A7110412	Diode, Zener, 05Z12Z
DS10	23115526	Diode, Zener, BZX79B5V1
MISCELLANEOUS		
E504	23198896	CRT Wire A
E505	23180464	CRT Wire B
⚠ F601	23144898	Fuse, 3.15AT
F601A	23845691	Clip, Fuse, TWM6268
⚠ F801	23144896	Fuse, T2.0A
F801A	23845691	Clip, Fuse, TWM6268
⚠ FS01	23144892	Fuse, T1.6A
FS01A	23845691	Clip, Fuse, TWM6268
K902	23120820	Remote Hand Held Unit, CT995
⚠ P001	23161788	Aerial Terminal Socket
P101	23164099	Plug, Phono, 1 Pin
P101	or 23163162	Jack, Phono
P661	23166180	Headphone Jack
⚠ P801	23171814	Cable, Mains
PE61	23166233	Phono Jack, Yellow
PE62	23166233	Phono Jack, Yellow
PE63	23166235	Phono Jack, Red
PE64	23166234	Phono Jack, White
PE65	23166234	Phono Jack, White
S601	23145781	Switch, Push, 2C2P

Location No.	Part No.	Description
⚠S801	23145601	Switch, Push, 2C1P, Mains
SA01	23145588	Switch, Push, 2C1P
SA02	23145588	Switch, Push, 2C1P
SA03	23145588	Switch, Push, 2C1P
SA04	23145588	Switch, Push, 2C1P
SA05	23145588	Switch, Push, 2C1P
SA06	23145588	Switch, Push, 2C1P
SA07	23145588	Switch, Push, 2C1P
SE01	23145747	Switch, Slide, 2C2P
⚠V901A	23116330	Socket, CRT, 8P
W201	23250937	Coil, Delay Line, TRF2054
W661	23151400	Speaker, SPK-1129, 7 x 10 cm, 4 ohm
W662	23151400	Speaker, SPK-1129, 7 x 10 cm, 4 ohm
W663	23151400	Speaker, SPK-1129, 7 x 10 cm, 4 ohm
W664	23151400	Speaker, SPK-1129, 7 x 10 cm, 4 ohm
W665	23151397	Speaker, AD2274/T4, 2-1/4 Inch, 4 ohm
W666	23151397	Speaker, AD2274/T4, 2-1/4 Inch, 4 ohm
X501	23153962	Crystal, 4.43MHz
X502	23250949	Delay Line PAL Chroma, DL701
XC01	23153924	Crystal, 6MHz
Z101	A5611122	PSF, F1035B
Z201	23107926	Ceramic Filter, Video Trap, 6.0MHz, TCF1012
Z601	23107930	Ceramic Filter, 6.0MHz, TCF1008
ZA13	24094832	Capacitor Block, 6800pF x 7, 50V
ZA15	23153949	Ceramic Resonator, 4MHz, TCR1003

PC BOARD ASSEMBLIES

U301	23158227	DPC BOARD Assembly, PW4193
U601	23158220	HEAD PHONE BOARD Assembly, PW4199
U602	23158223	STEREO BOARD Assembly, PW4196
U901	23169866	CRT DRIVE BOARD Assembly PW4428
U902A	23158229	MAIN BOARD Assembly, PW4191
UA01	23158228	RMT/SELE. BOARD Assembly, PW4192
UA02A	23158225	CONTROL BOARD Assembly, PW4195-1
UA02B	23158224	LED BOARD Assembly, PW4195-2
UC01	23169839	Sound Mute BOARD Assembly, PW4445
UE01	23158205	AV JACK BOARD Assembly, PW4209
UF01	23169858	TELETEXT BOARD Assembly, PW4197A
UK01	23158254	IR-AMP BOARD Assembly, PW4170

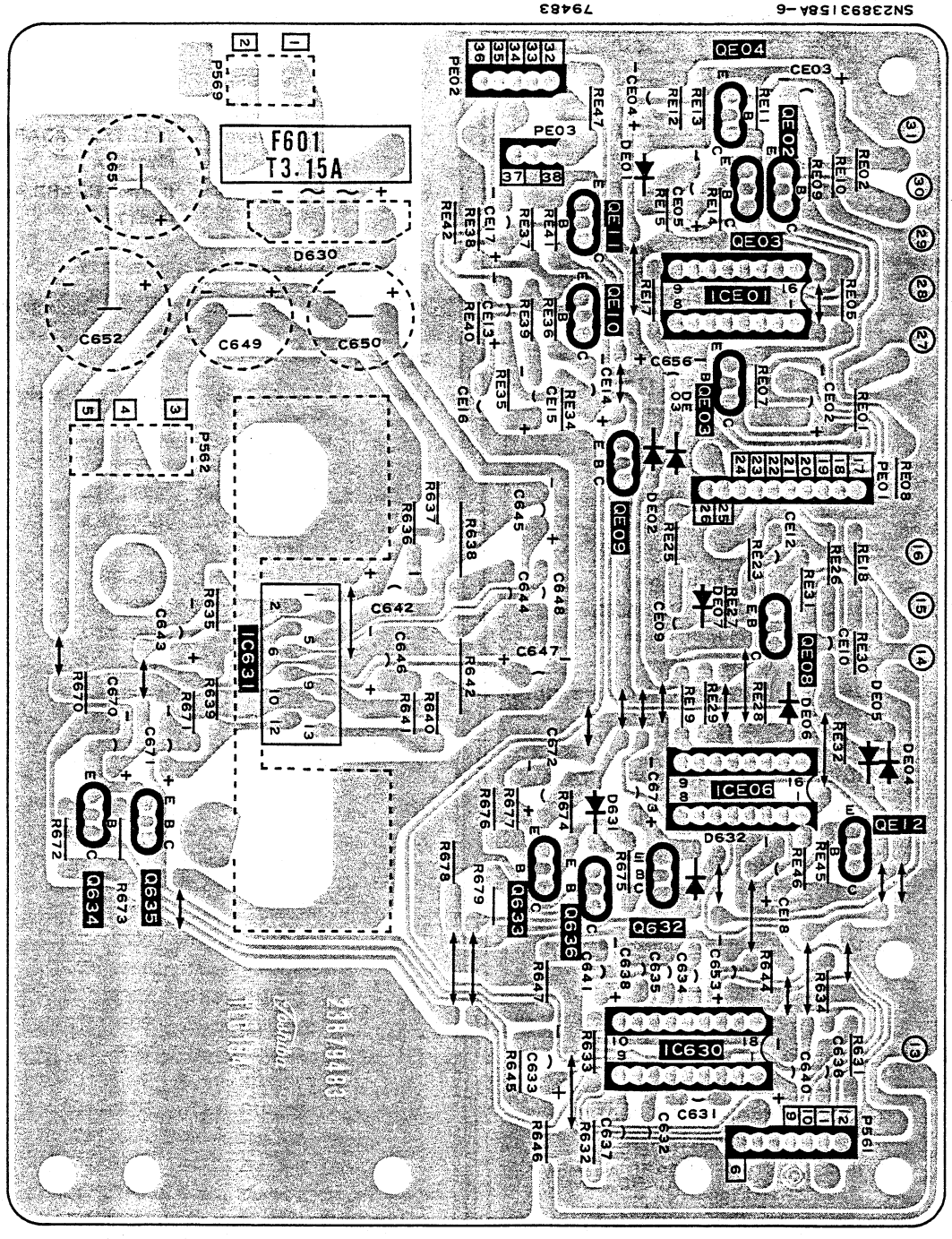
PICTURE TUBE

⚠V901	23112502	Picture Tube, A67-701X

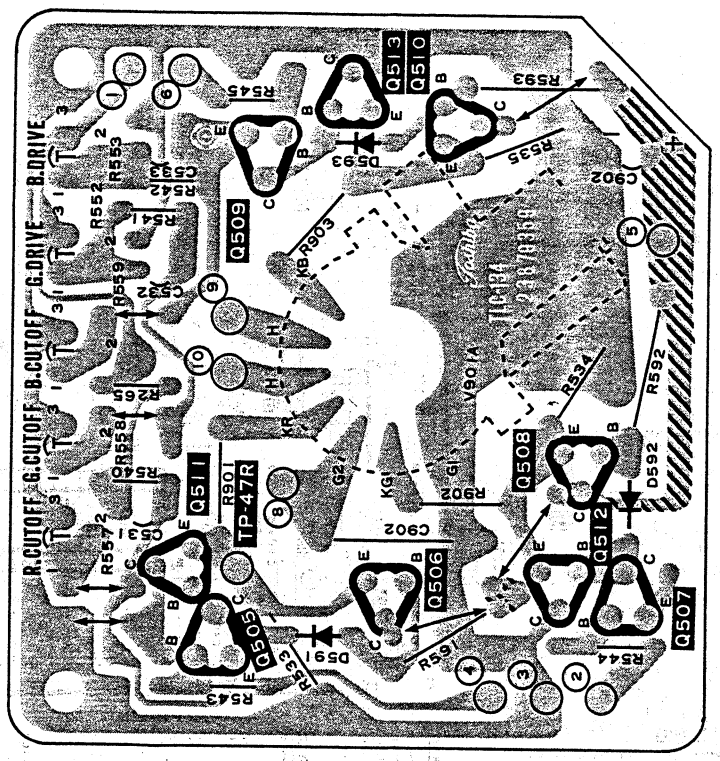
TUNER

H001	23121787	Tuner, UHF, TYPE204

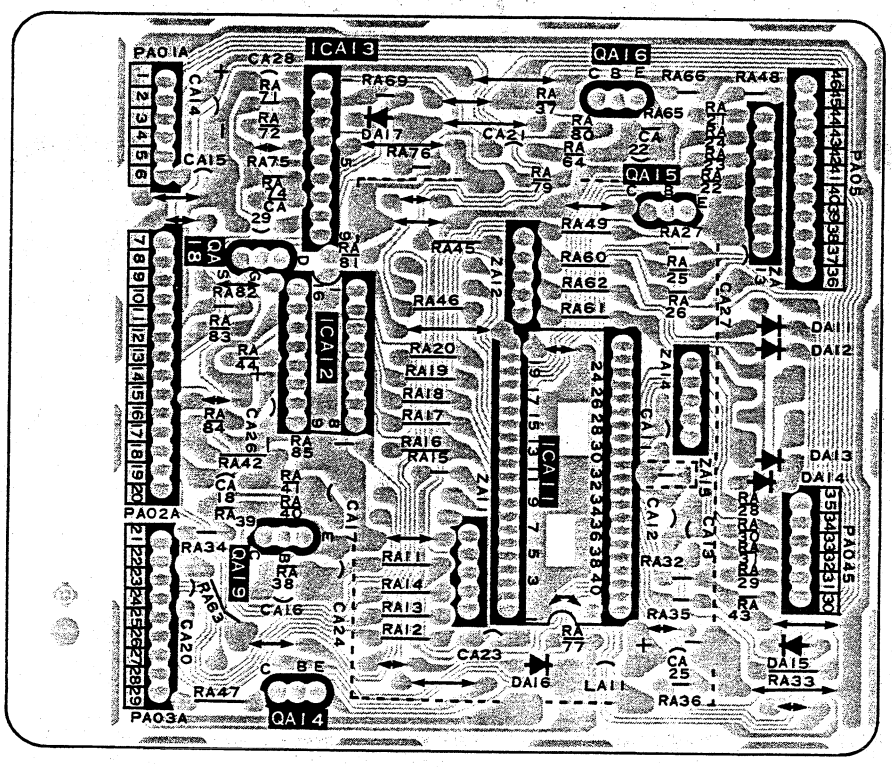
U602 STEREO BOARD PW4196 (Foil Side)



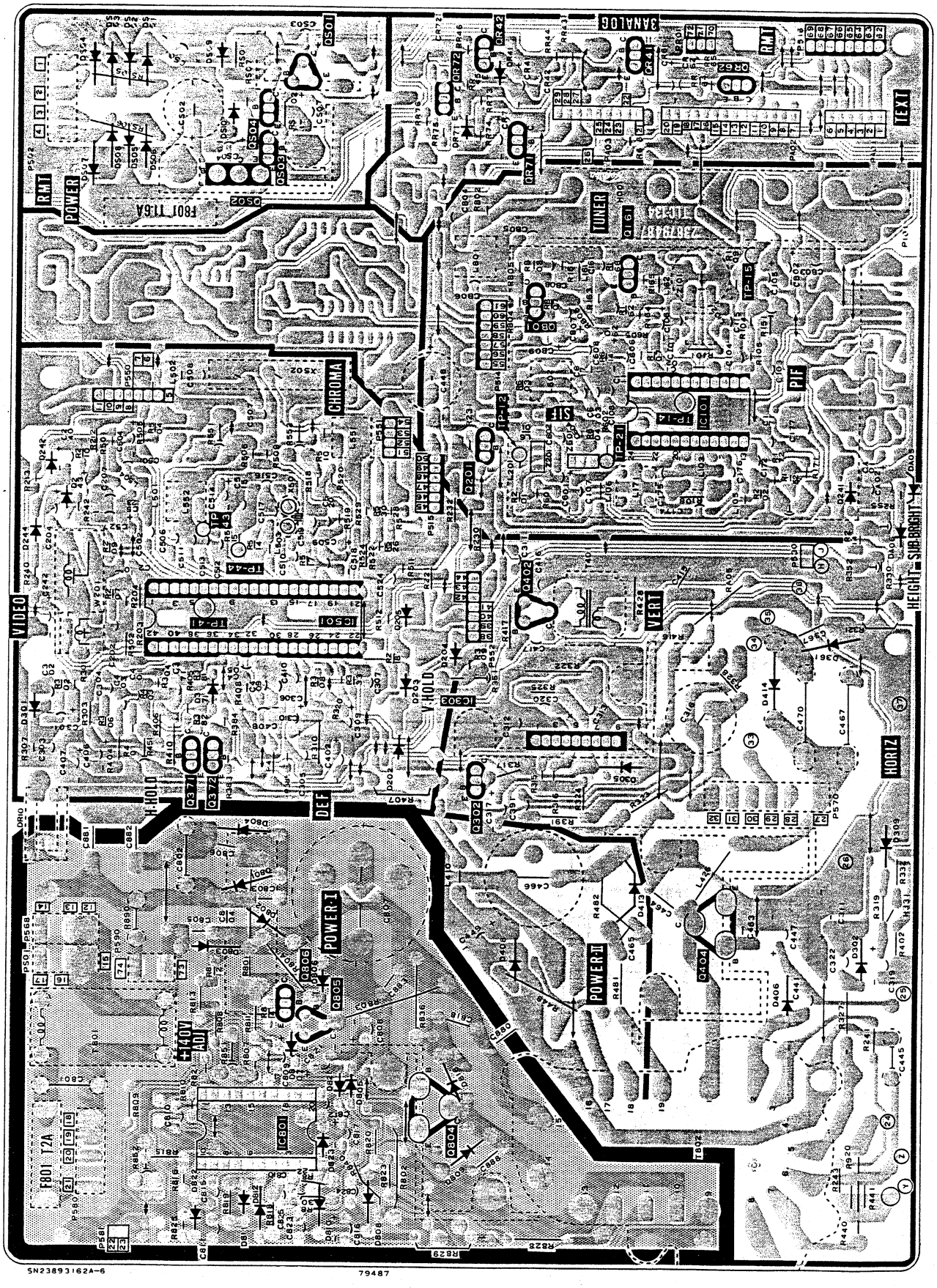
U901A CRT DRIVE BOARD PW4428 (Foil Side)



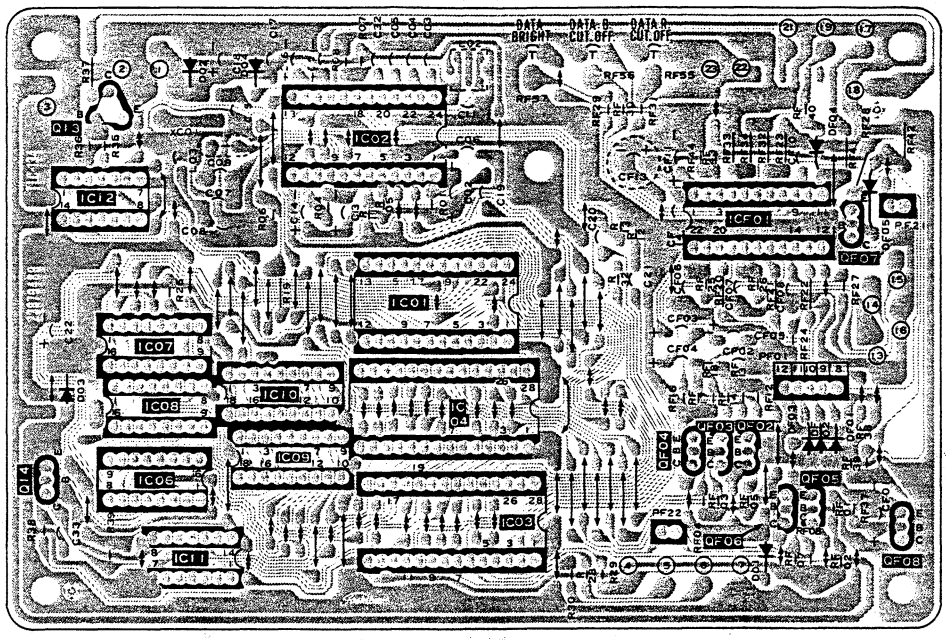
UA01 RMT/SELECTOR BOARD PW4192 (Foil Side)



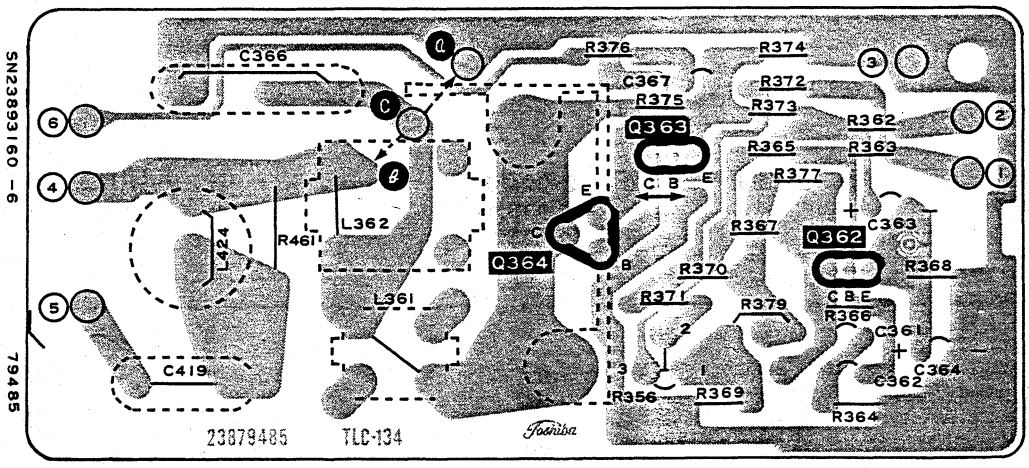
U902 MAIN BOARD PW4191 (Foil Side)



UF01 TELETEXT BOARD PW4197A (Foil Side)

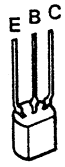


U301 DPC BOARD PW4193 (Foil Side)

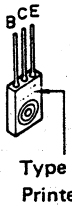


TERMINAL VIEW OF TRANSISTOR (AND IC)

① BC327
BC547A
BC547B
BC547C
BC557A
BF324

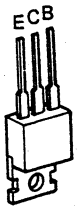


② BD233-16

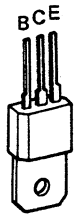


③ 2SK30ATM
2SK117

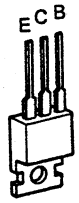
④ BD202
BDT31A



⑤ BF871
BF872

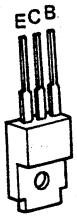


⑥ 2SC2552
2SD526

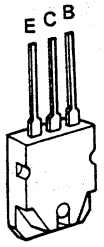


⑦ 2SC2068

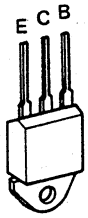
⑧ 2SC3298A



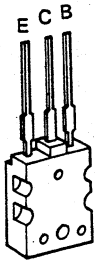
⑨ 2SB686
2SD716



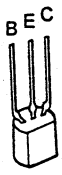
⑩ BDV65



⑪ 2SD1432
2SD1427

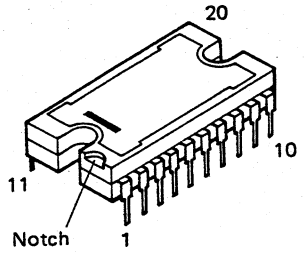


⑫ BF199



⑬ 2SC2482
2SA1320
2SA1321

⑭ IC801 TA7265AP



261T4B(1/2)

IMPORTANT SAFETY NOTE:
Components marked with the International Hazard Symbol: ⚠ and shaded must, if changed, be replaced by an approved type and must be mounted as the original. This will ensure that the safety standards adhered to during manufacture will be maintained following any servicing procedure.

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltage readings were obtained using a high impedance digital voltmeter.
2. (–) or ground lead of instruments should be connected to the ground marked (⊥) in the schematic on checking Non-isolated circuit but should be connected to the points marked (⏚) on checking isolated circuit surrounded by mark - - - -.
3. The voltage readings may vary as much as ±20%.
4. Check that the Tuning, A.F.C., Brightness, Contrast and Colour controls are adjusted for the best picture, making sure that the Contrast and Colour controls are set near to their mid-positions and the Brightness control is set nearly at maximum.
5. The waveforms were taken using a standard colour bar signal and were observed using a wide band oscilloscope via a low capacity probe.

NOTES:

1. This circuit diagram is subject to change without notice.

EXPRESSION

VALUE OF RESISTOR, CAPACITOR and INDUCTOR

1. Resistance is shown in ohm, k=1,000, M=1,000,000.
2. Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF and the values more than 1 in pF.
3. Unless otherwise noted in schematic, all inductor values more than 1 are expressed in μH, and the values less than 1 in H.

GROUNDING SYMBOL

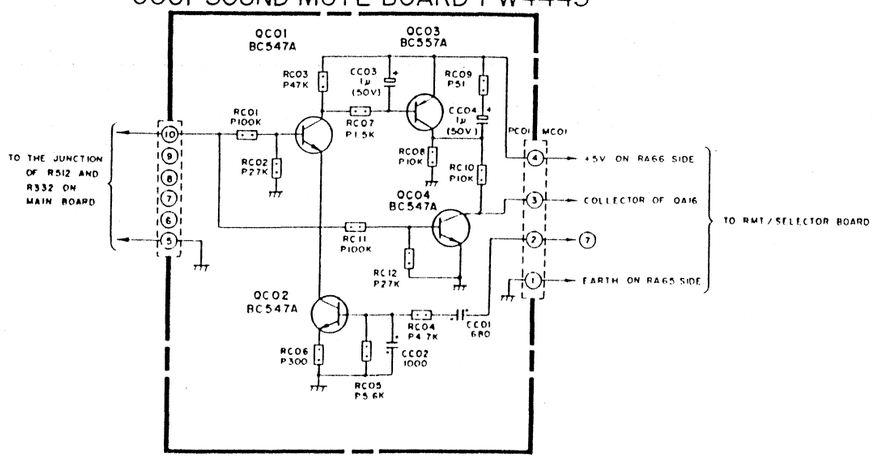
1. ⊥: Non isolated ground, ⏚ : Isolated ground.

MODIFICATION NOTE:
The following modifications are made for the improvement of ICA11
Check the type name of ICA11 when servicing

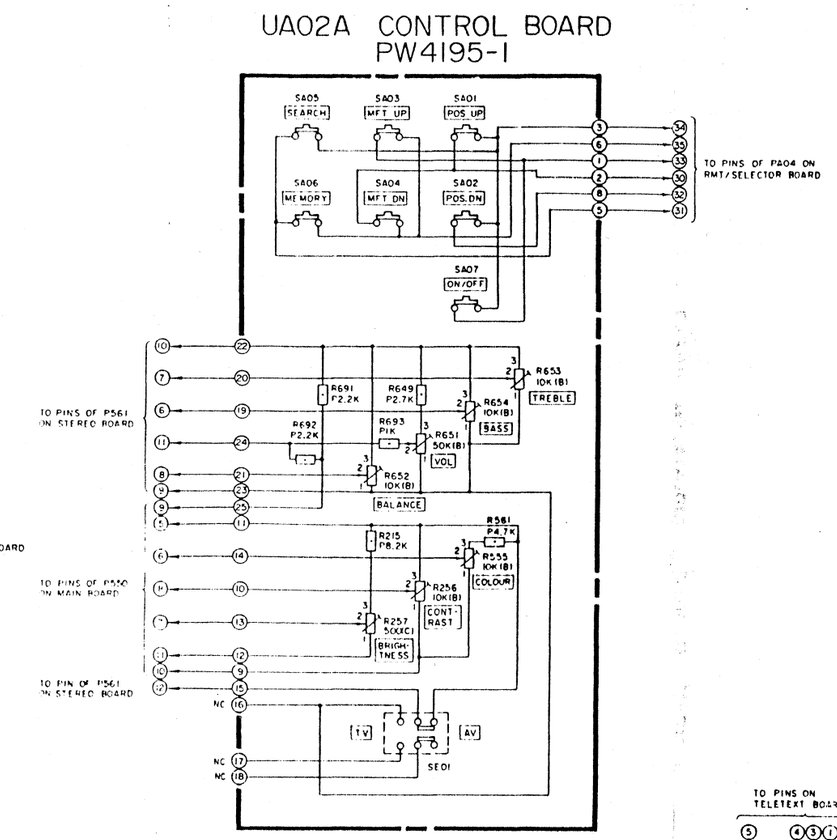
	Before Modification	After Modification
ICA11	IC, TMP47C432N-8867	IC, TMP47C432N-8884
UCO1	Sound Mute Board Assembly, PW4445	None
QA16	None	Transistor, BC547A
CA21	None	CD, 680PF
CA22	None	CD, 1500PF
RA64	None	CF, 4.7k ohm, 1/6W
RA65	None	CF, 5.6k ohm, 1/6W
RA66	None	CF, 10k ohm, 1/6W
MC01	Connector, 4P	None

See the portion surrounded by dot line in RMT/SELECTOR BOARD.

UCO1 SOUND MUTE BOARD PW4445

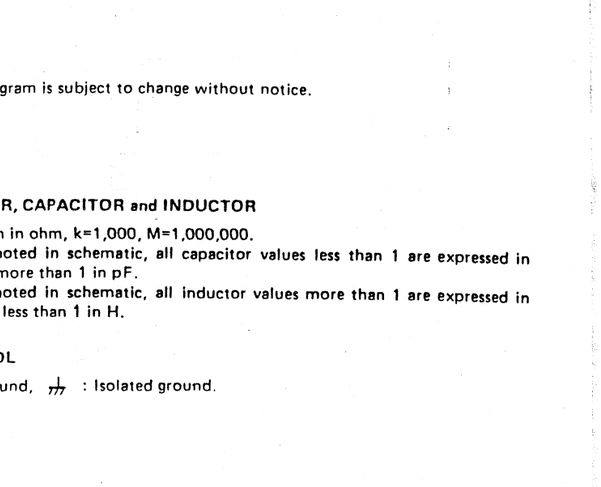


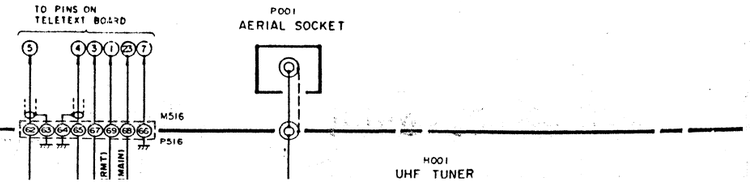
UA01 RMT/SELECTOR BOARD PW4193



UA02A CONTROL BOARD PW4195-1

UA02B L.E.D. BOARD PW4195-2





less than 1 are expressed in

nore than 1 are expressed in

RESISTORS

Prefixed to values:

TYPE	MARK
Carbon Comp.	S
Oxide Metal Film	R
Ins. Carbon Film	P
Wire Wound	W
Cement covered W.W.	NO MARK
Fusible Res.	FR

Sufflxes to values:

TOLERANCE	MARK
±1%	(F)
±2%	(G)

Suffixes to VR values:

LAW	MARK
Linear	(B)
'C' Curve Characteristic	(C)

Rating Markings:

WATTAGE	MARK
1/16W	
1/4W	
1/2W	
1W	1
2W	2

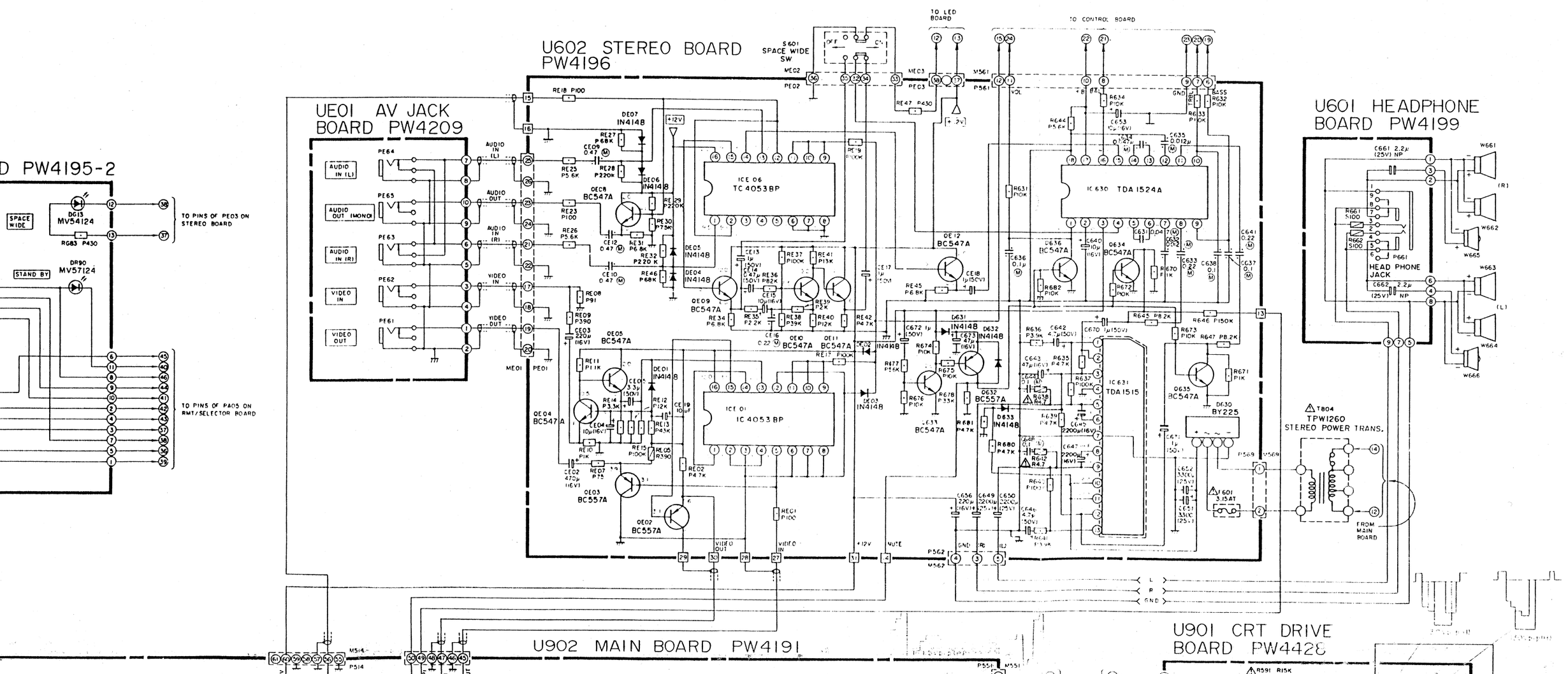
WATTAGE	MARK
3W	3
5W	5
10W	10
15W	15
20W	20
25W	25

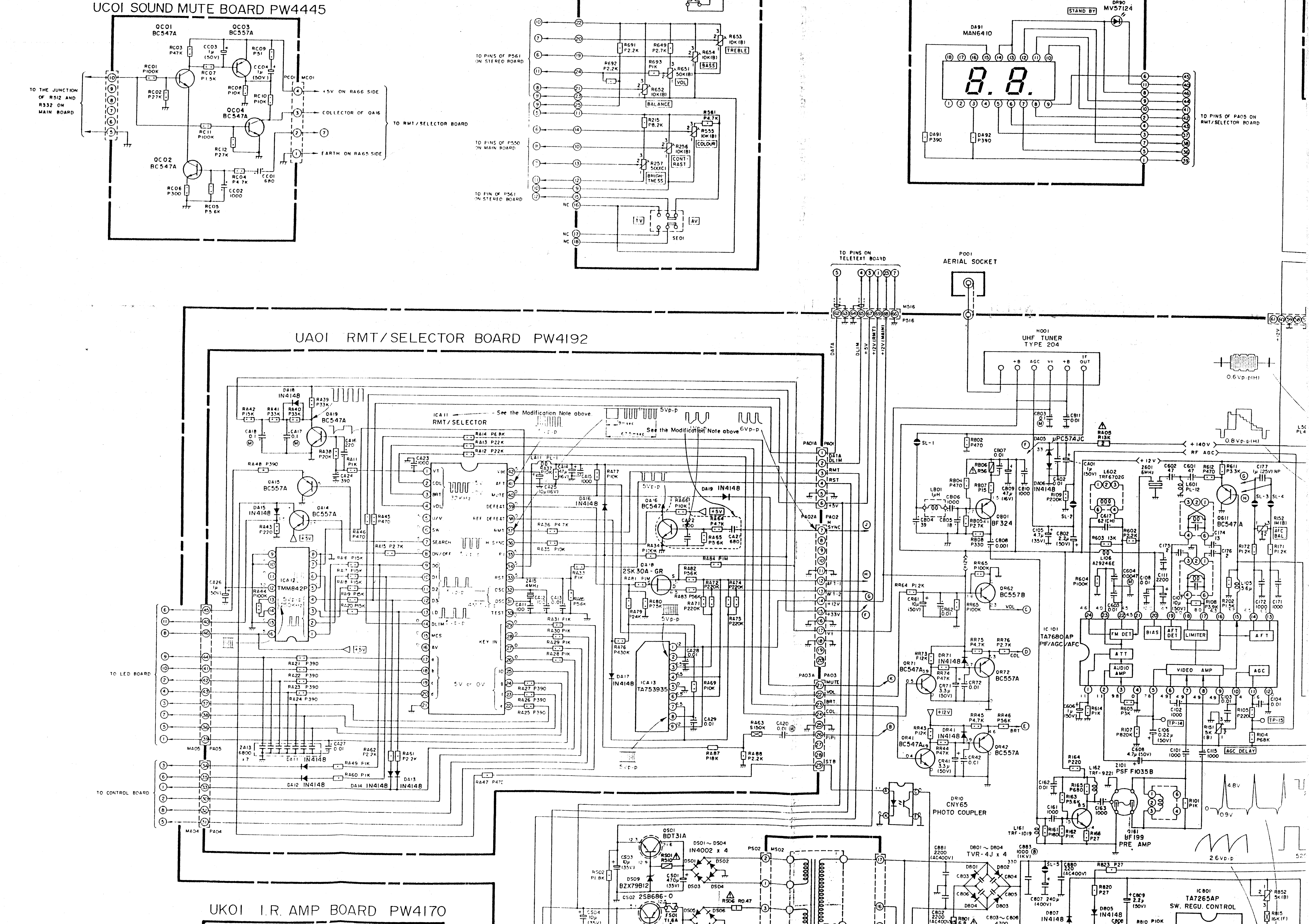
CAPACITORS

Rating Markings:

VOLTAGE	MARK
6.3V	
10V	
16V	
25V	
35V	
50V	

VOLTAGE	MARK
160V ~ 350V	
350V ~ 630V	
2.5kV	
Electro.	
Non Polar.	





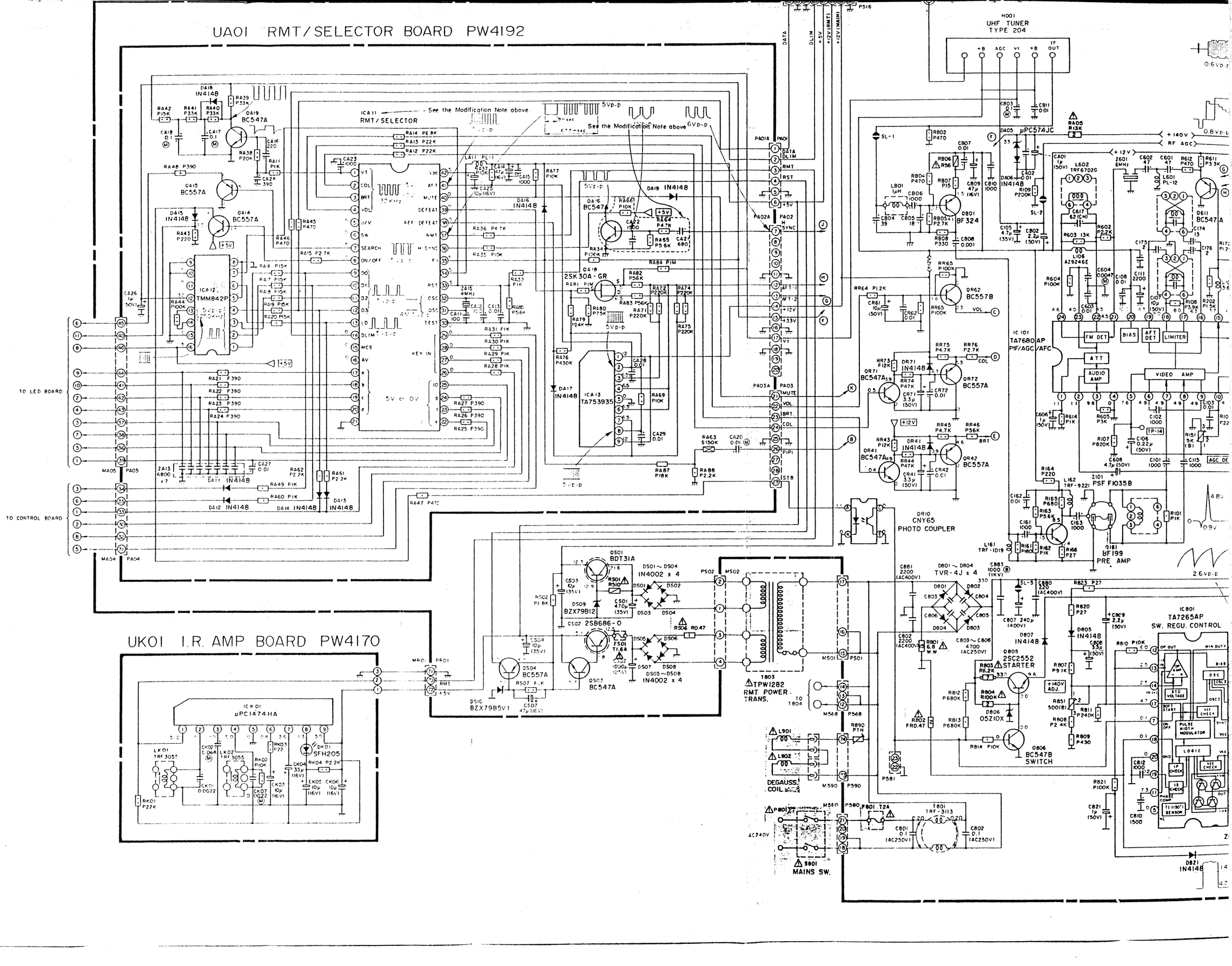
UC01 SOUND MUTE BOARD PW4445
QC01 BC547A
QC03 BC557A
QC04 BC547A
QC02 BC547A
TO THE JUNCTION OF R512 AND R332 ON MAIN BOARD
+5V ON RA66 SIDE
COLLECTOR OF QA16
EARTH ON RA65 SIDE
TO RMT/SELECTOR BOARD
TO PINS OF P561 ON STEREO BOARD
TO PINS OF P550 ON MAIN BOARD
TO PIN OF P561 ON STEREO BOARD
TREBLE
BASS
VOL
BALANCE
COLOUR
CONT-RAST
BRIGH-TNESS
TV
AV
SE01
STAND BY
DR90 MV57124
DA91 MAN6410
TO PINS OF PA05 ON RMT/SELECTOR BOARD
TO PINS ON TELETEXT BOARD
P001 AERIAL SOCKET
H001 UHF TUNER TYPE 204
UA01 RMT/SELECTOR BOARD PW4192
ICA11 RMT/SELECTOR
See the Modification Note above.
ICA12 TMM842P
ICA13 TA753935
TO LED BOARD
TO CONTROL BOARD
IC101 TA7680AP PIF/AGC/AFC
FM DET
BIAS
AFT DET
LIMITER
AFT
ATT
AUDIO AMP
VIDEO AMP
AGC
AGC DELAY
DR10 CNY65 PHOTO COUPLER
Q161 BF199 PRE AMP
Z101 PSF F1035B
D801 ~ D804 TVR-4J x 4
DS01 ~ DS04 IN4002 x 4
IC801 TA7265AP SW. REGU. CONTROL
UK01 I.R. AMP BOARD PW4170

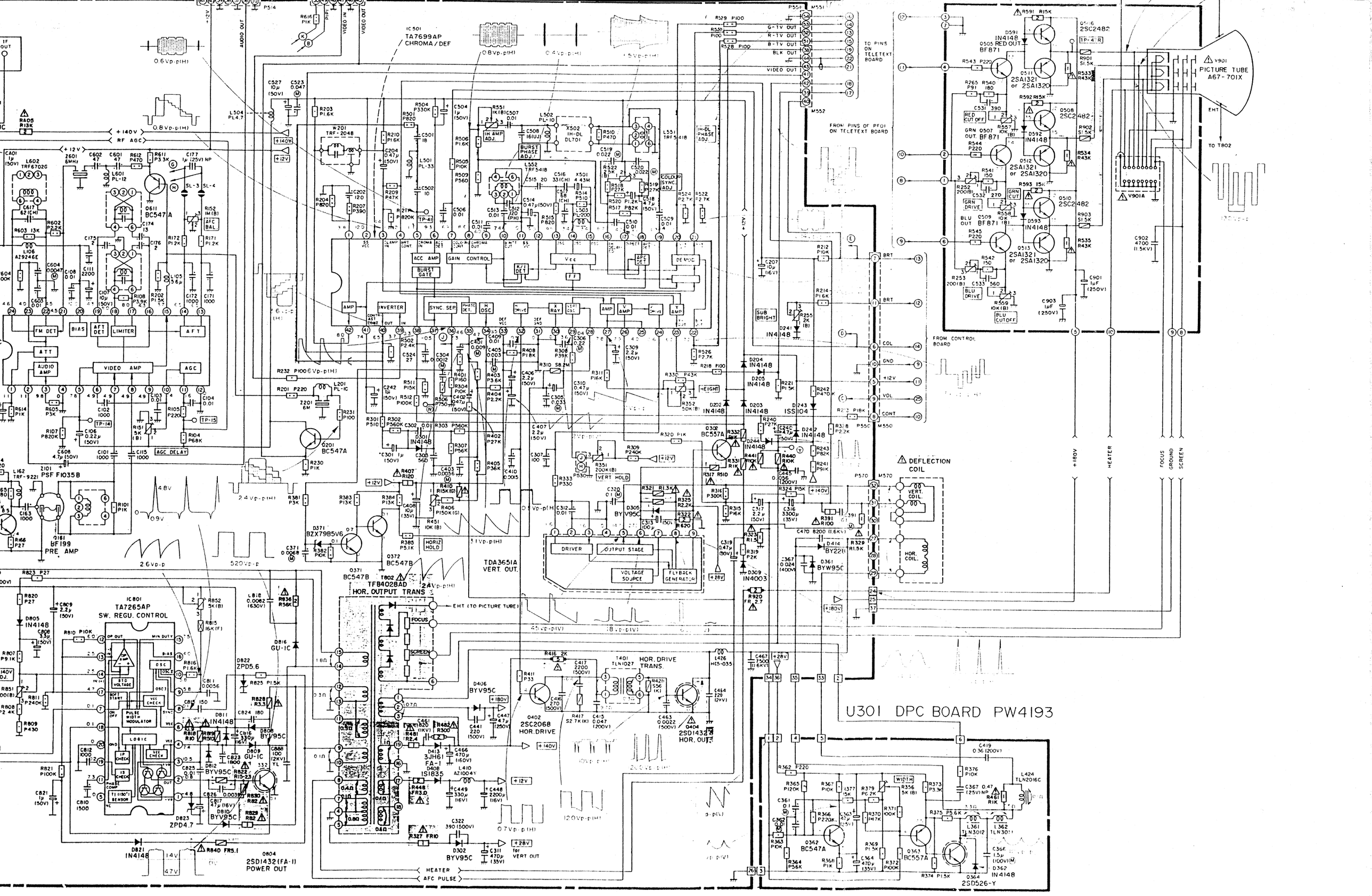
U902 MAIN BOARD PW4191

U901 CRT DRIVE BOARD PW4428

STAND BY
DR90 MV57124
TO PINS OF PA05 ON RMT/SELECTOR BOARD
VIDEO IN (R)
VIDEO IN
VIDEO OUT
PE62
PE61
VIDEO IN
VIDEO OUT
ME01
PE01
IC E01 IC 4053 BP
Q635 BC547A
Q634 BC547A
Q633 BC547A
Q632 BC557A
Q631 BC547A
Q630 BC547A
Q629 BC547A
Q628 BC547A
Q627 BC547A
Q626 BC547A
Q625 BC547A
Q624 BC547A
Q623 BC547A
Q622 BC547A
Q621 BC547A
Q620 BC547A
Q619 BC547A
Q618 BC547A
Q617 BC547A
Q616 BC547A
Q615 BC547A
Q614 BC547A
Q613 BC547A
Q612 BC547A
Q611 BC547A
Q610 BC547A
Q609 BC547A
Q608 BC547A
Q607 BC547A
Q606 BC547A
Q605 BC547A
Q604 BC547A
Q603 BC547A
Q602 BC547A
Q601 BC547A
IC 631 TDA 1515
D630 BY225
T804 TPW1260 STEREO POWER TRANS.
F601 3.15AT
FROM MAIN BOARD
HEAD PHONE JACK
W663
W664
W665
W666
(L)
VIDEO OUT
VIDEO IN
+12V
MUTE
GND
L
R
GND
M514
P514
M562
P562
M552
P552
M551
P551
TO PINS ON TELETEXT BOARD
FROM PINS OF P501 ON TELETEXT BOARD
FROM CONTROL BOARD
IC 501 TA7699AP CHROMA / DEF
IC 801 TA7265AP SW. REGU. CONTROL
T802 TFB4028AD HOR. OUTPUT TRANS
TDA3651A VERT. OUT.
DRIVER
OUTPUT STAGE
VOLTAGE SOURCE
FLYBACK GENERATOR
ACC AMP
GAIN CONTROL
BURST GATE
SYNC. SEP
INVERTER
FM DET
BIAS
AFT DET
LIMITER
AFT
ATT
AUDIO AMP
VIDEO AMP
AGC
AGC DELAY
PRE. AMP
IF OUT
RF AGC
+140V
+12V
+28V
+180V
HEATER
FOCUS
GROUND
SCREEN
EHT
EHT (TO PICTURE TUBE)
FOCUS
TO T802
DEFLECTION COIL
VERT. COIL.
HOR. COIL.
PICTURE TUBE A67-701X
V901A
SUB BRIGHT
BRT
COL
GND
+12V
VOL
CONT
RED CUT OFF
GRN CUT OFF
BLU CUTOFF
RED DRIVE
GRN DRIVE
BLU DRIVE
0.6Vp-p(H)
0.8Vp-p(H)
0.4Vp-p(H)
1.5Vp-p(H)
4.8V
0.9V
2.4Vp-p(H)
0.9Vp-p(H)
3.1Vp-p(H)
2.6Vp-p
520Vp-p
24Vp-p(H)

UA01 RMT/SELECTOR BOARD PW4192




IC501
TA7699AP
CHROMA / DEF
IC801
TA7265AP
SW. REGU. CONTROL
TDA3651A
VERT. OUT.
TBO2
TFB4028AD
HOR. OUTPUT TRANS
2SD1432(FA-I)
POWER OUT
U301 DPC BOARD PW4193
PICTURE TUBE
A67-701X
DEFLECTION
COIL
FROM CONTROL
BOARD
TO PINS
ON
TELETEXT
BOARD
FROM PINS OF P501
ON TELETEXT BOARD
PSF F1035B
BF199
PRE. AMP
BC547A
BC547B
2SC2482
2SA1321
or 2SA1320
IN4148
BYV95C
BYW95C
IN4003
ISS104
BZX79B5V6
ZPD5.6
ZPD4.7
FM DET
BIAS
AFT DET
LIMITER
AFT
ATT
AUDIO AMP
VIDEO AMP
AGC
AGC DELAY
ACC AMP
GAIN CONTROL
BURST GATE
SYNC. SEP.
INVERTER
DRIVER
OUTPUT STAGE
VOLTAGE SOURCE
FLYBACK GENERATOR
DEMOD
VCC
FF
HOR. DRIVE TRANS.
2SC2068
HOR. DRIVE
2SD1432
HOR. OUT
HEATER
AFC PULSE
EHT
TO TB02
+140V
+12V
+180V
+28V
RF AGC
FOCUS
SCREEN
GROUND
HEATER

261T4B (2/2)

IMPORTANT SAFETY NOTE:
Components marked with the International Hazard Symbol: ⚠ and shaded must, if changed, be replaced by an approved type and must be mounted as the original. This will ensure that the safety standards adhered to during manufacture will be maintained following any servicing procedure.

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltage readings were obtained using a high impedance digital voltmeter.
2. (−) or ground lead of instruments should be connected to the ground marked (⊥) in the schematic on checking Non-isolated circuit but should be connected to the points marked (⏚) on checking isolated circuit surrounded by mark - - - -.
3. The voltage readings may vary as much as ±20%.
4. Check that the Tuning, A.F.C., Brightness, Contrast and Colour controls are adjusted for the best picture, making sure that the Contrast and Colour controls are set near to their mid-positions and the Brightness control is set nearly at maximum.
5. The waveforms were taken using a standard colour bar signal and were observed using a wide band oscilloscope via a low capacity probe.

NOTES:

1. This circuit diagram is subject to change without notice.

EXPRESSION

VALUE OF RESISTOR, CAPACITOR and INDUCTOR

1. Resistance is shown in ohm k=1,000, M=1,000,000.
2. Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF and the values more than 1 in pF.
3. Unless otherwise noted in schematic, all inductor values more than 1 are expressed in μH, and the values less than 1 in H.

GROUNDING SYMBOL

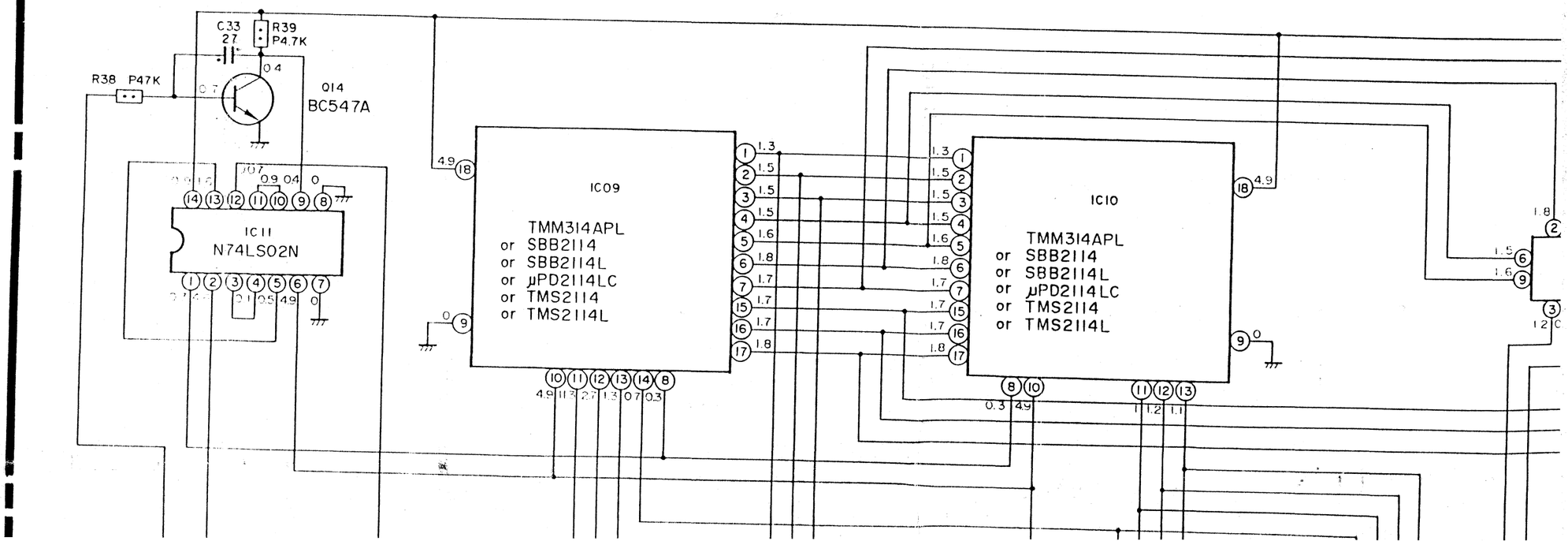
1. ⊥: Non isolated ground, ⏚ : Isolated ground.

RESISTORS

Prefixed to values:

TYPE
Carbon Comp.
Oxide Metal Film
Ins. Carbon Film
Wire Wound
Cement covered W.W.
Fusible Res.

UF01 TELETEXT BOARD PW



RESISTORS

Prefixed to values:

TYPE	MARK
Carbon Comp.	S
Oxide Metal Film	R
Ins. Carbon Film	P
Wire Wound	W
Cement covered W.W.	NO MARK
Fusible Res.	FR

Suffixes to values:

TOLERANCE	MARK
±1%	(F)
±2%	(G)

Suffixes to VR values:

LAW	MARK
Linear	(B)
'C' Curve Characteristic	(C)

Rating Markings:

WATTAGE	MARK
1/16W	
1/4W	
1/2W	
1W	1
2W	2

WATTAGE	MARK
3W	3
5W	5
10W	10
15W	15
20W	20
25W	25

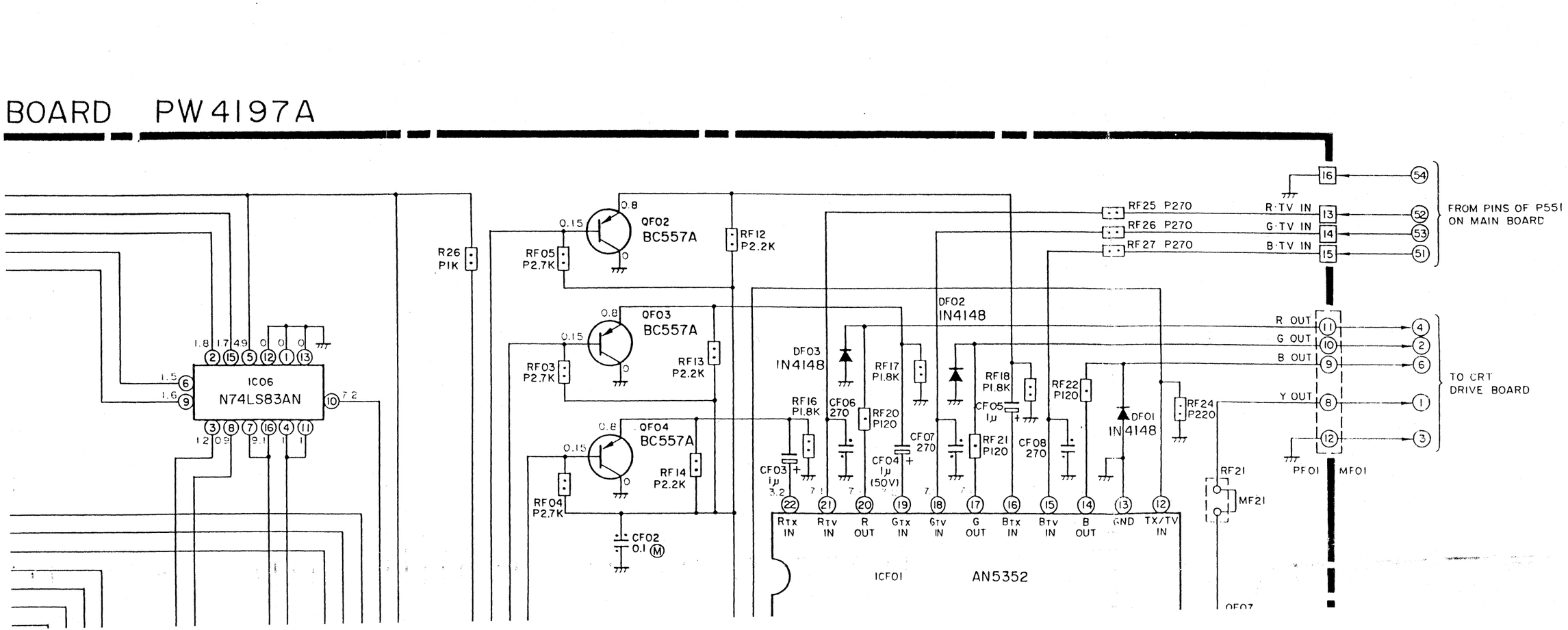
CAPACITORS

Rating Markings:

VOLTAGE	MARK
6.3V	
10V	
16V	
25V	
35V	
50V	

VOLTAGE	MARK
160V ~ 350V	
350V ~ 630V	
2.5kV	
Electro.	
Non Polar.	

BOARD PW4197A



FROM MAIN BOARD

62 DATA
65 DLIM
Po
66 GND
69 +12V (RMT/SEL)
67 +5V
42 VIDEO IN
44 GND

D01 IN4148
D02 IN4148
D03 IN4148
D05 IN4148

C17 0.1 (M)
C18 100µ (25V)
C22 100µ (16V)
C01 1µ (50V)
C03 1000
C02 10µ (25V)
C06 0.1 (M)
C14 10µ (25V)
C13 1µ (50V)
C09 16 (CH)
C07 0.01
C08 47
C04 330
C05 47
C32 1000
C16 1µ (50V)
C11 0.1 (M)
C15 0.0039 (M)
C19 1000
C21 1000
C20 1000

R28 P470
R29 P470
R30 P470
R01 P100K
R04 P1K
R05 P6.8K
R06 P6.8K
R11 P1.2K
R07 P680
R08 P1.5K
R12 P1.2K
R13 P1.2K
R19 P6.8K
R32 P68K

XC01 6 MHz
L02
L03 PL-15

IC11 N74LS02N

IC02 SAA5030

IC03 SAA5040B

IC01 SAA5020

IC04 SAA5050

IC12 TC4011BP

IC07 N74LS16

TMM314APL
or SBB2114
or SBB2114L
or µPD2114LC
or TMS2114
or TMS2114L

IC03
SAA5040B

IC01
SAA5020

IC04
SAA5050

IC07
N74LS161N

IC08
N74LS161N

IC12
TC4011BP

ICF01
AN5352

Rtx IN | Rtv IN | R OUT | Gtx IN | Gtv IN | G OUT | Btx IN | Btv IN | B OUT | GND | TX/TV IN

Vcc | FILTER | CONTRAST CONTROL | BLK. PULSE IN | CLAMP PULSE IN | R ADJ. | B ADJ. | BRT CONTROL | Y OUT | Ytv IN

QF04 BC557A
QF05 BC547A
QF06 BC547A
QF07 BC327
QF08 BC547A
Q13 2SC1815-Y

DF01 IN4148
DF04 IN4148
DF05 0A91
DF06 IN4148

RF14 P2.2K
RF04 P2.7K
CF02 0.1 (M)
RF08 P2.7K
PF22
MF22
RF07 4.9 P2.7K
RF02 P6.8K
CF03 1μ
CF04 1μ (50V)
CF07 270
RF21 P120
CF08 270
RF21
MF21
PF01
MF01
RF34 P10K
RF33 P10K
RF23 P10K
RF32 P10K
CF10 0.01
RF43 P8.2K
RF44 P4.3K
RF31 P2.2K
RF30 P2.2K
RF29 P5.6K
RF28 R240
+12V (MAIN)
CF11 1μ (50V)
CF13 220μ (50V)
CF14 0.01
RF55 10K(B)
RF56 10K(B)
RF57 10K(B)
RF42 R82
RF41 100
Y TV IN
RF40 P220
BLK IN
FROM MAIN B
RF38 P10K
RF01 P3.9K
CF01 2.2μ (50V)
RF37 P2.7K
RF39 P5.6K
R37 P3.3K
R35 P22K
R36 P22K